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2011 EGSA Fall Technical & Marketing Conference Wrap-Up

Plus:

Fall 2011 Market "Pulse" Results

High-Level Description of
UPS Types and Topologies

Connecting Across the Generations

Member Profile: Evans Cooling

Generac Goes the Distance in
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Renewable Energy World

North American Conference & Expo

February 14-16, 2012; Long Beach, CA

North America's leading all renewable event. This year's program will consist of 7 tracks including: Biomass, Geothermal, Hydro, Policy, Market & Finance, Utility Integration/Smart Grid, and Wind. For more information, visit www.renewableenergyworld.com.

EGSA 2012 Spring Convention

March 25-27, 2012; Austin, TX

EGSA's Annual Spring Convention features educational sessions on a broad range of issues impacting today's On-Site Power industry. More information will be available at www.EGSA.org or by calling (561) 750-5575.

EGSA 2012 Fall Technical & Marketing Conference

September 9-11, 2012; Milwaukee, WI

The Fall Technical and Marketing Conference is held during September and is designed to focus on technical and marketing issues. Registration information will be available online at www.EGSA.org or call (561) 750-5575.

Conferences

NFMT Conference & Expo

March 13-15, 2012; Baltimore, MD

The country's #1 conference and exposition for non-residential building owners; facility managers; maintenance engineers; directors of sustainability; planning; operations and management. EGSA has partnered with NFMT to launch the Power Source Pavilion. The Power Source Pavilion and educational sessions will provide facility professionals with exclusive access to on-site power solutions. For exhibit information, contact EGSA at (561) 750-5575, ext 203 or e-mail Kim Giles at k.giles@EGSA.org.

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Powerline is published six times per year on a bi-monthly basis. Articles and information submitted for publication should be forwarded to the attention of the Editor at the address above 30 days prior to publication. Technical articles and articles of general interest to the electrical generation industry are actively sought and encouraged. *Powerline* reserves the right to limit information appearing in its pages to that which, in its sole discretion, will reflect positively on EGSA and the industry which it serves.

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John Kelly, Jr.
2011 EGSA President
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2011 Fall Conference

It's with great pride that I report on the many successes of the 2011 Fall Technical and Marketing Conference held in Baltimore during September. While I must admit it was a little strange working from the Hyatt with my house and business just a few miles down the road, I reflect on the amount of work that got done and I want everyone who attended to give themselves a pat on the back! We made some great strides and learned a lot from those three comprehensive days of networking, education and industry enrichment.

Speaking of learning a lot, we have made tremendous strides with our Speaker Program in the last couple of years and in Baltimore, we raised the bar again. The Communications and Convention Committee has really stuck to their goal of having everyone take something valuable away from the speaker program. With such a varied selection of speakers, there was an opportunity to learn something different in every power-packed hour. I also noted when I attended that committee meeting that attendees were extremely positive in their evaluations of the individual speakers, so I was not alone in my summation. The Committee also had record attendance on Monday, which might be the reason that both the theme for the Spring Convention and the speaker program, has started taking shape so quickly. It is good to see EGSA members fired up about making the Conference and Convention program a productive and informative part of the work schedule!

While the fish weren't biting, the weather held solid throughout the three-day event. In the wake of Irene, I don't really think we could've asked for better weather. I hope everyone enjoyed their time in the "Charm City" and took the opportunity to network with their fellow EGSA members and guests, because that's what a conference like this is all about, bringing members together to forge in-roads within the Industry.

As I noted in my welcoming address, a warm thank you needs to go out to our sponsors for the event. Each year, in an effort to keep costs down, a great amount of detail goes into making an event budget and sticking with it. Our sponsors really stepped up to the plate this year in helping offset those costs to EGSA, and surprisingly, the sponsor list included many companies sponsoring for the first time. We had a record year for sponsorships, with close to \$19,000 dollars raised.

A report on the Conference would not be complete without noting our committee progress. The action items that we took away this year were very important steps towards meeting association goals. For example, the Membership Committee has raised the stakes for recruiting new EGSA members. They came up with a very creative "Winner Takes All" Challenge that rolled out in mid-October and has more than a \$1000.00 in prizes for the person who recruits the most new members between now and March 5th. If you haven't set your personal goal for this Challenge, I suggest that it is worth your while, with prizes including hotel credits of \$250 and free registration fees for the Fall Conference. Make sure that you are aware of the details, because the Challenge will continue into March and the winner will be announced at the Spring Convention.

Speaking of Austin, the theme for our convention has been determined... "Finding Opportunity in an Uncertain Environment." EGSA will be sending announcements shortly on the details of our Spring Convention. It's never too early to start planning!

In closing, I have two very important initiatives to keep front and center—one is our new venture with the National Facilities Management & Technology (NFMT) Show being held March 13th-15th in Baltimore. We are rolling out the EGSA Power Source Pavilion next year with Building Operating Management's NFMT Show and we hope you will join us and exhibit in our inaugural year. This business model has been highly successful at Power Gen and we hope to reach this important end-user market with this highly viable opportunity. If you need details, please contact Kim Giles, EGSA Marketing Manager, for more information at k.giles@egsa.org.

Finally, I want to close with the Kelly Challenge. With the Kelly Challenge, I am reaching out to both member firms and individuals to help to further establish EGSA and the EGSA Technician Certification Program as the industry standard. I ask that both firms and individuals continue to further this initiative and, in doing so, raise the standard of quality within the On-Site Electrical Generating Industry as a whole!

The Kelly Challenge is for the membership to actively influence the writing of service contract specifications to include the requirement for any winning company to employ EGSA certified technicians. This challenge has particular importance for distributor/dealers but also for other

Continued on page 12



George Rowley
EGSA Director
of Education
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eLearning Program Update

The eLearning Survey

As mentioned in my last report, we were very pleased with the strong member response to our invitation to contribute opinions, ideas and suggestions for the potential EGSA eLearning program. To refresh your memory, we offer a summary of the highlights of the survey:

- 90.7% of respondents felt that EGSA Internet-based training would have Moderate Value to Very High Value. (On a scale from 1 to 9 with 1 being Little or No Value, 5 being Moderate Value, and 9 being Very High Value.)
- Suggestions were made for approximately 240 future EGSA course topics.
- Based on the number of respondents to the survey, and the people that they have influence over, survey statistics showed that somewhere in the neighborhood of 700-1000 people would take the EGSA 101 course if offered free of charge to EGSA members.
- At the most elementary level of analysis, more than 1200 people would participate in the On-Site Power 101 course. If we were able to extrapolate the data in a way that represented the entire EGSA membership, we would be looking at a very large number of participants. Moreover, there is no way to gauge the potential interest of industry personnel that are not currently members of EGSA.
- 63% of survey respondents have had previous experiences with on-line learning and 89.9% found it to be a valuable experience.

The Preliminary Recommendations

The strength of the responses were instrumental in enabling us to prepare preliminary recommendations to the Education Committee and the EGSA Board of Directors. Moreover, we are pleased to announce that both bodies approved our preliminary recommendations. We plan to submit Final Recommendations to the Board during the EGSA Spring Convention in Austin, TX. However, the Committee needs to complete additional research & trouble shoot the following areas prior to the convention.

We need to:

- Concisely define the contract terms with the two consultants that we have identified as “preferred vendors” (One firm will develop the courses and the other will manage the Learning Management System (the ‘heart and soul’ of an eLearning program).
- Ascertain the steps in the process and determine the hard and soft costs associated with

implementing an eCommerce system (so that students can enroll and pay on-line).

- Solidify the budget for “authoring” software and associated training costs (authoring software is the software that develops each course).
- Determine the best approach to address additional staff resources (Do we hire someone or contract with a free-lancer, etc.)

Certification Update

We plan to update the exam and study guide – The two current versions of the certification exam and the Study Guide have both been in use since 2006. To keep abreast with technology, they both need to be updated. During our Fall Conference, the Board authorized an exam and study guide update.

In order to complete the updates, we will use a similar process that we used previously to develop the exam and guide, but with a more abbreviated set of tasks. In essence, we will identify the areas in which change has occurred and will task senior tech volunteers with extensive experience in those areas.

After being selected as a volunteer senior tech, the Team will work with a Ferris State University faculty member for one or two days to review the current test to add, delete and modify questions and answers. Based upon the results of their efforts, the test will be revised and revisions to the study guide will follow. We will begin building the structure and process for this project soon and it is likely that we will begin soliciting volunteers shortly after the first of the year.

EGSA Certification Testing Update

As of the end of September, 614 techs have taken the exam since program launch with 504 certifications presented. However, due to re-certification requirements, we have 466 EGSA certified techs currently (There are 38 technicians whose certification has expired and they have not yet renewed). We continue to have a good year in terms of certification testing. 105 techs took the exam through September and 88 of those techs passed it (the overall pass rate since program inception is 82%). In fact, we believe there is a chance that this might be the best year yet for testing volume, but we will have to wait until the end of the year to confirm this. There are also multiple initiatives that are under development that should have a significant impact on the program if they come to fruition.

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Codes & Standards

The Codes and Standards Surveillance Committee met during the EGSA Fall Conference in Baltimore, MD in September to cover recent activity of many standards that are of interest to EGSA members, including UL 2200 Stationary Generators, UL 2201 Portable generators, the International Building Code concerning Earthquake requirements, IEEE 1547 Distributed Resources (Sections 1 - 6) and the NFPA Codes 99 Healthcare facilities, NFPA 110 and 111 Emergency Power and NFPA 70 The National Electric Code. The Committee also discussed incoming 2012 EGSA President Michael Pope's suggestion of writing a standard for Exhaust Silencers. Four members of the Committee agreed to help those who had approached Michael Pope to write a *Suggested Practice for Exhaust Silencers*. This work will need to be executed quickly, with the majority of work being accomplished via email if the recommended Practice is to be finished any time soon.

I received correspondence in late August from UL saying there will be an STP UL2200 meeting in Chicago at UL headquarters on December 7th and 8th to discuss any proposals to change UL 2200. However, those proposals had to be submitted to UL by September 23rd. This had been sent out over the EGSA email system and was announced again in the Code and Standards meeting. To date, I have not heard additional information from UL concerning this meeting. There have been several notices from UL of changes proposed by UL staff to UL2200 over the past calendar year. Many of these have not passed the Standards Technical Panel (STP) vote. An example of this was a proposed change to section 35.2.4 that sought to revise the LP gas fuel line and fitting requirements, including the pull test and vibration test. This did not pass with 4 yes votes, 6 no votes, 3 abstentions and 8 votes not returned. What will come up in the December meeting is currently unknown.

IEEE 1547.4 *Guide for designing and Operating Distributed Resource Islands and Their Connection to the Grid* has now been approved and is being published.

There was supposed to be a ROC (Report on Comments) Meeting in Chicago for the Electrical Committee for NFPA 110 *Emergency and Standby Power Systems* and NFPA 111 *Standard for*

Stored Electrical Energy Emergency and Standby Power Systems on October 3rd and 4th. However, there were only eleven items to discuss so the meeting was cancelled and a webinar was substituted on Oct 3rd instead. The webinar lasted just over 6 hours, with each comment thoroughly discussed. One important item that will be in the spotlight is a complete reorganization of Sections 5.3 *Energy Converters*, Section 5.6.7 *Prime Mover Cooling Systems*, Section 7.7 *Heating, Cooling and Ventilation* and Section 7.8 *Installed EPS Cooling Systems* rewritten and reorganized by John Whitney of Clarke Fire Protection Products. John added the word "Maintenance" to 5.3 making it "Emergency Converters – Temperature Maintenance". The remainder of John's work consisted of reworking and reorganizing the sections to flow in a more logical sequence as it related to the main topic.

In another item an appendix item A.7.7.2.1 *When calculating the Ventilation requirements for EPS many things must be considered* was added. It lists 7 items that concern air flow, temperature of that air and heat sources in the room. Most other comments requesting reconsideration or new wording were rejected as was the only comment submitted for NFPA 111.

An EGSA member questioned the Authority having Jurisdiction (AHJ) interpretation of NFPA 30 *Fuel Tanks* section 4.4.3 Additional Testing. "Tanks that have been relocated ...shall be tested in a manner acceptable to the authority having jurisdiction." In this case, the AHJ was requiring re-testing of the fuel tank after delivery to its initial installation, saying this tank was relocated from where it was built. Robert Benedetti wrote a response that the word "relocated" did not apply to fuel tanks shipped from the manufacturer to the initial job site.

The NFPA Standards Council in an August 2011 ruling essentially upheld the NFPA process of committees hearing proposals, comments and then the committee approved package being voted on and accepted by the members at the NFPA Annual meeting, by rejecting an appeal that would have removed three proposed new sections to NFPA 99 *Health Care Facilities* providing requirements for selective coordination. ■

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FROM THE TOP

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EGSA members. As more RFPs that contain this requirement hit the street, there will be a huge incentive for companies who are serious about the generator service and maintenance business to have their technicians certified. This may also have the added benefit of enticing more companies to join EGSA.

I want to thank everyone who contributed to the success of the Fall Conference. I urge you to stay involved in helping to influence and shape our industry. Drop us a line and let us know how we can help make a difference in your neck of the woods with membership or the Kelly Challenge, e-mail@egsa.org. ■

EDUCATION

Continued from page 8

Marketing the Certification Program

We believe that efforts to market the program are getting back on track after a hiatus of several months. Kim Giles, EGSA's new Marketing Manager, had a conference call with the Certification Committee prior to the convention, and met with the committee for several hours at its meeting. Our marketing plan will be focused on reaching end users and educating them on the program's benefits and positioning our efforts through multiple avenues, such as internet marketing, grassroots efforts, association marketing and others.

A couple of the ways that we have already embarked on these challenges include our new alliance with the National Facilities Management & Technology (NFMT) Show in Baltimore, MD. In March 2012, EGSA will have a "Power Source Pavilion" at this national end user show with more than 5000 facility managers and consulting & specifying engineers. The second example of our end user outreach includes a unique program that our 2011 EGSA President, John Kelly, Jr. has launched the "Kelly Challenge." This membership challenge calls on all EGSA members to identify with the program as a cohesive unit, marketing the certification program to end users directly in their day-to-day operations. Specifically, members are urged to identify the advantages of utilizing certified technicians in Requests for Proposals and service contracts. EGSA is developing and refining tools continually to build momentum with the program.

If you have questions about EGSA education programs or how you can become involved, please contact George Rowley via e-mail at g.rowley@egsa.org or by phone at 561-237-5557. ■

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Fall 2011 Power Generation Market "Pulse" Report

By: Joe Zirnhelt, Power Systems Research

Report Objective

The EGSA Market Trends Committee annually surveys the EGSA membership on how their business is performing and their power generation market opinions.

Survey results are intended to provide member companies with a "pulse" or sense of the on-site power industry at large and an opportunity to compare their impressions with other EGSA Member companies. Survey results are neither designed nor intended to include or provide price sensitive or competitive data.

Survey Methodology

An email invitation to participate was sent to more than 1250 primary and secondary contacts at EGSA member companies for whom email addresses are on file. As an incentive to participate, EGSA offered those who completed the survey by August 29, 2011 a chance to win a \$200 gift card. This year's winner was Paul Feld of Penn Power Systems.

Survey Results and Conclusions

A copy of each question along with a chart or graph illustrating the distribution of responses may be found in the pages following. Pertinent comments and Committee observations concerning each question's results also are included.

The 51 survey respondents represented a wide cross section of the EGSA membership. Survey responses displayed a good distribution of the data.

The Committee drew a number of conclusions from the survey, including:

- EGSA Members expect the 2011 power generation market to finish above 2010 levels; 69% reported growth in 2011 year-to-date power generation related sales over 2010 while 22% indicated relatively flat sales in 2011 year-to-date; only four (4) respondents indicated sales in 2011 have declined from 2010 levels.
- Over 83% of survey respondents anticipate growth in 2012 power generation related sales compared to 2011.
- Employee staffing levels over the past 6 months reflect an expanding market amongst EGSA member companies. Almost half (47%) reported relatively no change in staffing levels over the past 6 months with 53% reporting increases in employee numbers; no respondents indicated employee reductions.
- Forty-seven percent (47%) of respondents indicated anticipated employee growth over the next 12 months.
- Key market segments for EGSA members participating in the survey as reflected by those with a high percentage of importance ranking of 1,2,3 included: Commercial (non-residential), Data Center, Hospitals, Construction and Oil & Gas.

- The outlook for 2012 includes an expected shift towards a greater percentage of sales attributed to Tier 4 (Interim or Final) product. In 2011, forty-five percent (45%) of respondents indicated that Tier 4 (Interim or Final) product will account for greater than 10% of power generation related sales; in 2012 this same figure is expected to increase, with sixty-seven percent (67%) of respondents expecting Tier 4 (Interim or Final) product accounting for greater than 10% of power generation related sales.
- While the effects of the RICE NESHAP are yet to be seen, sixty-three percent (63%) of respondents believe the regulation will have either "some effect" or a "significant effect" while twenty-nine percent (29%) were not sure yet how the regulation would affect their business.

The Market Trends Committee

Chaired by Kyle Tingle of John Deere Power Systems, the Market Trends Committee provides EGSA with a forum in which market trends and other market data closely related to the power generation industry may be discussed in a way that benefits the Association and its members.

Beyond discussion, the Committee has the responsibility and ability to develop and make recommendations to the Board of Directors regarding programs and methods for the compilation of statistical information. The Committee focuses on complete power generation packages as well as component level trends to enhance the Association's market knowledge of trade, product sales, growth rate, emerging technologies, economic trends, market forecasts and other statistical data in an effort to assist Association members in accomplishing their objectives.

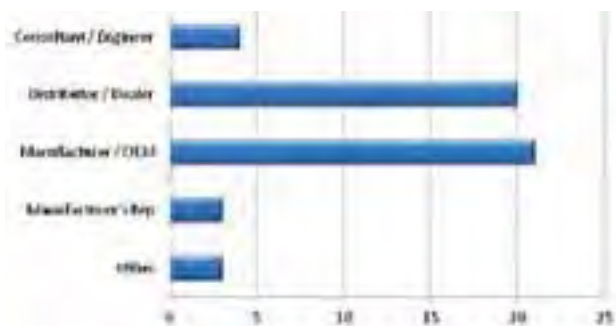
The Committee recently offered all EGSA Members an opportunity to participate in the 2011 Power Generation Market Survey to gauge members' impressions concerning current business conditions relating to the genset industry. As a courtesy to our members, EGSA has produced this summary of the survey results. For more information about the survey or the Market Trends Committee, contact Kyle Tingle at TingleKyleJ@johndeere.com.

EGSA does not require any respondent to provide proof of income, sales volume or company size via supporting data or third party verification.

EGSA makes no claims regarding the statistical accuracy of the survey's results as they relate to current or future real world economic conditions. EGSA makes no claims or recommendations concerning the use of this survey's results for marketing or sales projections. As designed and conducted, this survey is strictly intended to gauge impressions concerning company performance as well as current and short term future market conditions across the entire range of EGSA membership.

Question #1

Which of the following best describes your company type?

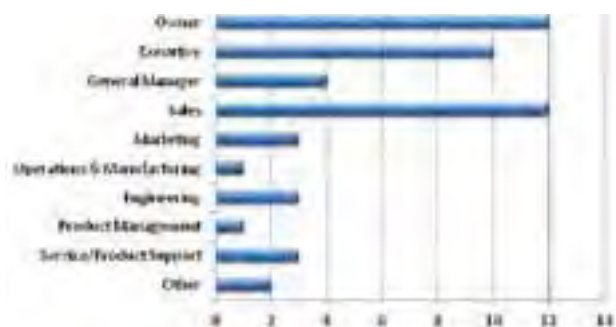


80% of survey respondents were represented by either Distributor/Dealer or Manufacturer/OEM companies.

The total number of survey respondents was 51.

Question #2

Which of the following best describes your position?

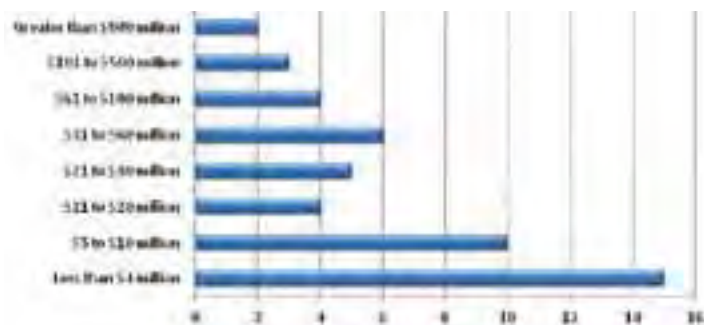


Over half (51%) of survey respondents were in executive management positions including owner, executive or general manager.

12 of 51 respondents (24%) were in a sales related position.

Question #3

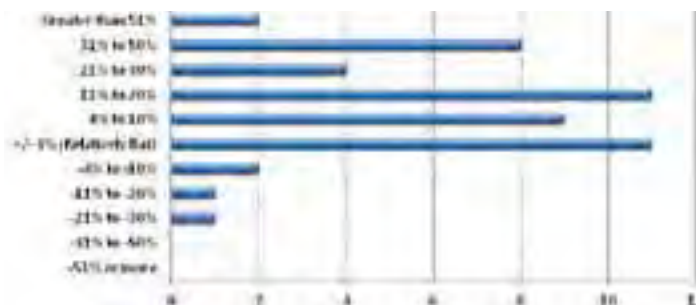
What were your estimated power generation related sales in 2010?



Fifty-nine percent (59%) of respondents reported they had less than \$10 million in power generation related sales in 2010 with 31% of the total reporting in the lowest category of less than \$4 million.

Question #4

Which of the following best describes your company's anticipated 2011 power generation related sales growth (or decline) over 2010?



A total of 34 of 49 respondents or 69% reported growth in 2011 year-to-date power generation related sales over 2010.

A total of 11 respondents or 22% reported relatively flat sales in 2011 year-to-date in comparison to 2010.

Four (4) respondents or 8% indicated sales in 2011 have declined from 2010 levels.



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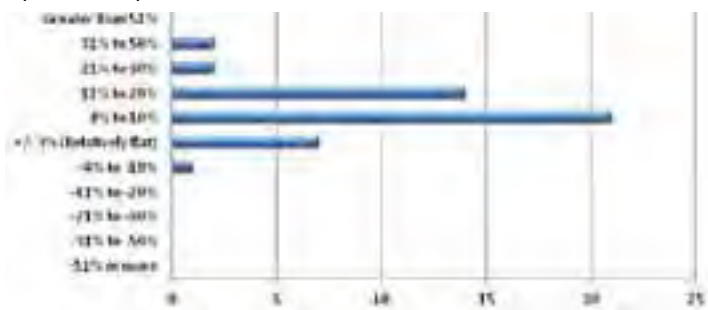
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Question #5

Which of the following best describes your company's anticipated 2012 power generation related sales growth (or decline) over 2011?



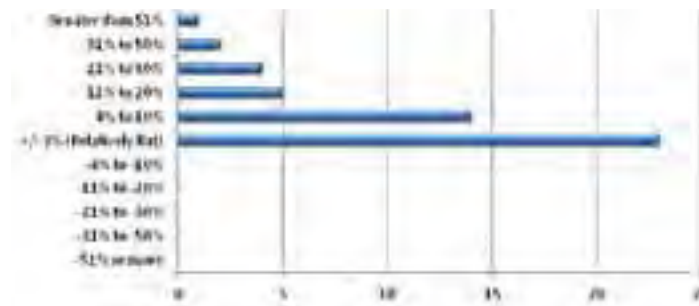
A total of 39 respondents or 83% anticipate growth in 2012 sales levels.

A total of 7 respondents or 15% anticipate relatively flat sales in 2012 in comparison to 2011.

Only 1 respondent anticipates sales in 2012 to decline in the range of -4% to -10%.

Question #6

Which of the following best describes your company's employee growth (or reduction) in the past 6 months?

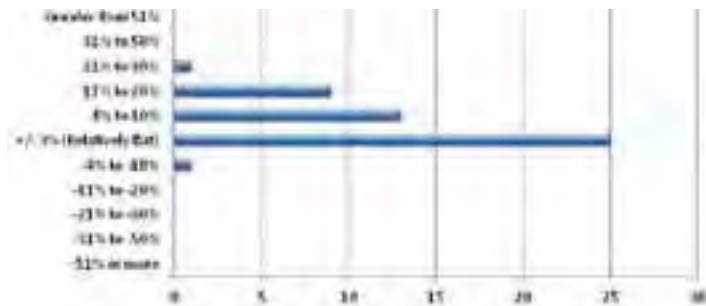


Twenty-six (26) respondents reported employee increases with 19 of the 26 falling somewhere in the range of 4% to 20% employee growth over the past 6 months.

No respondents reported employee reductions.

Question #7

Which of the following best describes your company's employee growth (or reduction) in the next 12 months?



Twenty-three (23) respondents (47%) reported plans to increase employees in the next 12 months.

Question #8

Please rank the following markets 1 to 10 in the order of their importance to your company with "1" being the most important and "10" being the least important.

Market	1	2	3	4	5	6	7	8	9	10	Response Count
Commercial (non-residential)	15	12	6	3	8	0	2	2	0	1	49
Construction	2	9	7	6	5	8	2	7	1	0	47
Data Center	9	4	10	5	6	2	7	0	2	0	45
Hospital	3	8	9	9	3	5	2	3	1	3	46
Marine	1	3	2	1	3	4	8	4	7	13	46
Military Government	4	3	4	5	5	5	6	6	7	1	46
Oil & Gas	7	3	6	6	1	4	6	7	3	2	45
Renewables	2	3	2	3	4	3	5	4	12	10	48
Rental	5	0	2	7	9	9	6	4	5	3	50
Residential	2	5	1	1	2	2	2	9	8	17	49
Question Totals											
answered question											51
skipped question											0



The market importance level indicates where EGSA members focus their engineering, sales and marketing efforts. Please note that these levels are "of the moment" and do not necessarily indicate a company's ongoing or future marketing strategy.

Key market segments for EGSA members participating in the survey as reflected by an importance ranking in the "Top" category of 1,2,3 included Commercial (non-residential), Data Center, Hospitals, Construction and Oil & Gas.

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PULSE ANALYSIS

Question #9

Please indicate your company's estimated 2012 power generation sales growth (or decline) over 2011.

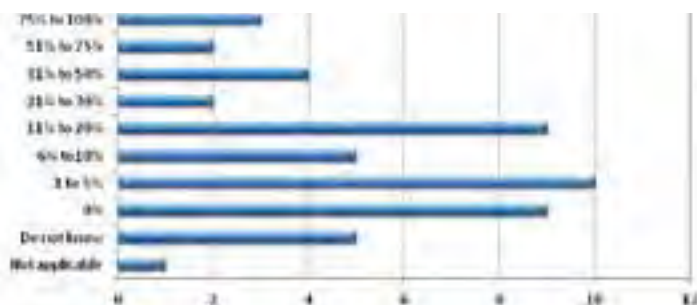
Market	Greater Than 50%	31% to 50%	21% to 30%	11% to 20%	4% to 10%	+/- 3%	-4% to -10%	-11% to -20%	-21% to -30%	-31% to -50%	-51% or worse	N/A	Response Count
Commercial (non-residential)	0	0	5	7	18	11	1	1	0	0	0	3	46
Construction	0	1	0	3	16	22	2	0	0	0	0	2	46
Data Center	0	0	4	9	8	18	2	0	0	0	0	4	45
Hospital	0	0	2	3	12	20	4	0	0	0	0	4	45
Marine	0	0	0	4	2	23	1	0	0	1	0	14	45
Military Government	2	0	2	4	9	17	3	0	0	0	0	8	45
Oil & Gas	1	2	2	9	6	13	2	1	0	0	0	10	46
Renewables	0	0	1	3	10	15	0	0	0	0	0	16	45
Rental	0	2	3	6	18	9	1	0	0	0	0	7	46
Residential	0	1	0	3	7	16	2	0	0	1	0	14	44
Question Totals													
answered question													47
skipped question													4

The outlook for 2012 by market segment reveals a close correlation to the market segments that were of top importance. The following are the percentage of total responses, by market segment, indicating a positive outlook for 2012 (in descending order):

Commercial (non-residential):	65%
Rental:	63%
Data Center:	47%
Oil & Gas:	43%
Construction:	43%
Hospital:	38%
Military – Government	38%
Renewables	31%
Residential	25%
Marine	13%

Question #10

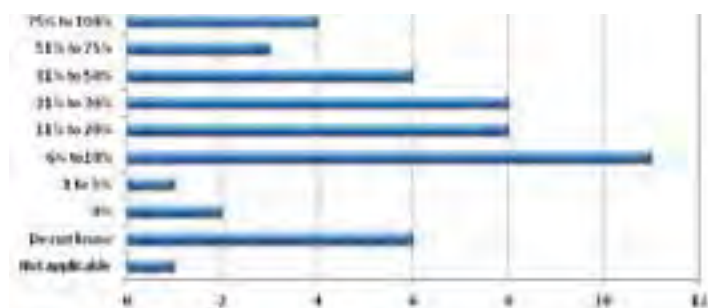
What percentage of your 2011 power generation related business is Tier 4 (Interim or Final) product?



Considering all responses other than "Not applicable" and "Do not know", 24 of 44 or 55% indicated that Tier 4 (Interim or Final) product accounted for 10% or less of their 2011 power generation business year-to-date.

Question #11

What percentage of your 2012 anticipated power generation business is Tier 4 (Interim or Final) product?



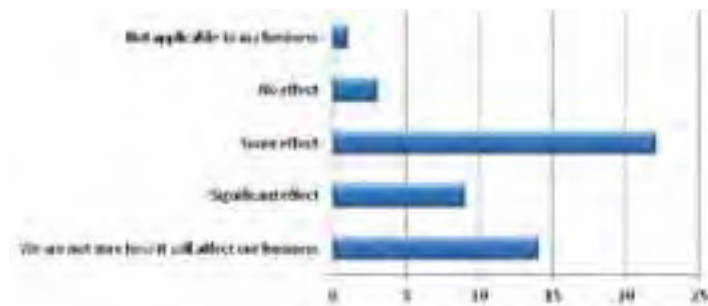
Again, considering all responses other than “Not applicable” and “Do not know”, the outlook for 2012 indicates an expected shift towards a greater percentage of sales attributed to Tier 4 (Interim or Final) product.

In contrast to 55% of respondents reporting 2011 sales of Tier 4 (Interim or Final) product to account for less than 10% of sales, this figure dropped to 33% of expected 2012 power generation sales.

In 2012, sixty-seven percent (67%) of respondents believe that Tier 4 (Interim or Final) product will account for greater than 10% of power generation related sales.

Question #12

How do you believe the RICE NESHP will affect your business before and after October 2013?



Sixty-three percent (63%) of respondents believe RICE NESHP will have either “some effect” or a “significant effect” on their business while 29% were not sure yet how the regulation would affect their business.

Raw voice of the customer elaboration on the effects of RICE NESHP included the following comments:

1. Consulting and specification services related to compliance.
2. Significant after-sales opportunities.
3. The jury is still out on the repercussions of an owner/operator not following the ruling guidelines. Potentially will have a big effect on demand.
4. While not directly, this requirement will suck funds out of projects that would otherwise have proceeded and used our product.
5. Not applicable to rental generators.

6. Too much noise. Still not sure of the RICE NESHP impact to the overall market. Particularly the actual rules and their enforcement.
7. We sell equipment for compliance.
8. Retro-fit of existing product.
9. Get ready for the black market to begin. This will have a huge impact on US manufacturers! We are marching ourselves right off a cliff.
10. We plan to provide emissions solutions to our customers that will be affected by RICE NESHP and see this as a new opportunity.

Question #13

Additional comments regarding the power generation market?

1. Biggest wild card is Washington. Will the regs stop changing? Will they start removing disincentives in the US to expansion and job creation?
2. Seems flat - Rentals are bright light for future.
3. Best years of our history and growing.

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High-Level Description of UPS Types and Topologies

By: Marcelo Algrain, Ph.D., Technical Steward, Electric Power Division, Caterpillar Inc.

By and large, the uninterruptible power supply (UPS) industry has not used consistent terms to describe the various UPS types and topologies available. Off-Line and On-Line UPS, Passive Standby, Double Conversion, and Line Interactive are among the more commonly used terms, but some confusion exists because this terminology has not been consistently used throughout the UPS industry.

For example, a passive standby UPS is also called off-line UPS, since its inverter is only active when primary/main power is not present. Also, the double conversion UPS is often referred to as on-line UPS since the UPS inverter is active at all times, continuously providing power to the load. However, while rarely the case, the line interactive UPS could also be called an on-line UPS, since the inverter continuously supplies power for either conditioning the line when the normal source is present, or feeding the load directly when not.

A number of UPS topologies have emerged over time, blurring the lines on their classification. Furthermore, most UPS designs include a means to power the load directly from the main power source known as a “bypass”. This adds operational flexibility as well as ease of maintenance, testing, diagnostics, etc. In some cases this is done using mechanical switches, and in others utilizing electronic static bypass switches. This is primarily a design issue, and not a topology feature.

In an effort to formalize the use of the terminology, the European Committee for Electrotechnical Standardization in Standard EN 62040-3 defines only three UPS types based on their mode of operation: 1) Passive Standby, 2) Double Conversion, and 3) Line Interactive.

Passive Standby

Passive standby refers to any UPS operation where, in normal mode of operation, the load is supplied by primary power and is subject to input voltage and frequency variations within stated limits. When the AC input supply is outside UPS design load tolerances, the UPS inverter is activated and uses stored energy, such as battery power, to maintain continuity of load power. This is by far the simplest topology, and is shown in Figure 1.

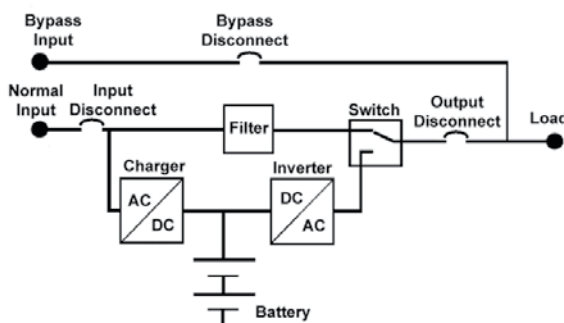


Figure 1: Passive Standby

In this system, the voltage and frequency of the utility/main source is continuously monitored, and if the parameters are within a set range, e.g. $\pm 10\%$, unconditioned utility power directly feeds the load through a fast acting static switch. Under this condition, the inverter remains energized, but it does not provide power to the load. The load is exposed to any power quality event present on the utility. Some designs incorporate a line filter and surge circuitry to provide basic noise filtration and surge protection capabilities.

This topology is not capable of controlling line frequency variations. Any line voltage distortion or unbalance is passed on to the load. When operating parameters fall outside acceptable limits, the static switch opens up and the load is fed directly by the inverter. This transition is very fast, but not seamless. For severe faults such as power loss, the static switch could open as fast as 1 millisecond, but in other scenarios it could take as long as one-half cycle.

Voltage and frequency regulation, as well as quality of power, are determined by the capabilities of the inverter. This inverter is generally a lower grade than those used in higher performing topologies. Also, the rating of the rectifier (AC-DC converter) is typically a fraction of the inverter rating, as its purpose is to charge the battery and not supply power to the inverter.

The main benefit of this approach is lower cost. The overall efficiency of this system is high, since the load is supplied directly by the main AC source the majority of the time, and minimal power conversion losses are incurred when the utility is present. Only a small fraction of the input power is used to keep the energy storage medium charged and overcome parasitic losses. Other benefits of this topology include smaller size, ease of integration (it is primarily either on or off), and simpler controls.

This topology has a few notable drawbacks. It does not allow for conditioning of utility power in standby mode, leading to more frequent engagement of the energy storage mode, and a reduction in battery life. This topology is rarely used on larger power applications.

Double Conversion

Double conversion refers to any UPS operation where continuity of load power is maintained by a UPS inverter, with energy supplied from the DC link in normal mode of operation and from the energy storage system in stored energy mode of operation. The output voltage and frequency are independent of input voltage and frequency conditions. The double conversion UPS is the antithesis of the Standby approach, and the topology is shown on the next page in Figure 2.

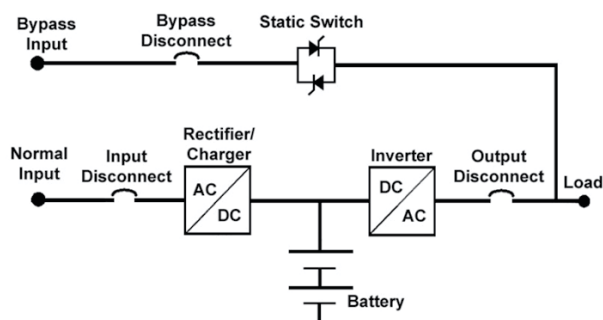


Figure 2: Double Conversion

The inverter is connected in series between the primary AC source and the load, with power to the load flowing continuously through the inverter. As far as the load is concerned, it is indistinguishable whether the inverter uses utility power or stored energy as a source, unless the stored energy is depleted.

In normal mode, the AC input from the utility is rectified by establishing a DC link voltage. If the energy storage medium is a battery, the DC link voltage would typically be the charging voltage of the battery. Hence, the power drawn from the input AC source is equal to the power delivered to the load plus the power absorbed by the battery to keep it charged as well as the power to cover parasitic losses.

This continuous conversion of the entire AC input power into DC is what makes this topology less efficient than other topologies. However, this method enables the total decoupling of the input power source from the power delivered to the load. This results in a topology that offers the highest potential value to quality power applications where tight voltage and frequency regulation with low waveform distortion are sought.

To capitalize on these benefits, this approach requires a high-end inverter capable of producing very clean power. Also, the rectifier rating is slightly larger than the inverter itself, making it significantly larger than in other topologies and requiring more complex line filtering and power factor correction.

Generally speaking, the performance of the double conversion UPS is higher, efficiency is lower, and the technology is more expensive. In an effort to reduce power consumption, some double conversion UPS systems provide an additional mode of operation where the system is operated as a passive standby unit during normal operation, which some manufacturers call “eco-mode.” While this negates most of the benefits of the double conversion topology, it reduces operating costs during times when clean power may not be a firm requirement or the utility source is likely to meet them.

Line Interactive

Line Interactive is the third UPS type recognized by the standard. As its name implies, it continuously interacts with the line/utility in response to line power events. This topology refers to any UPS operation where, in normal mode of operation, the continuity of load power is maintained by the use of a UPS inverter or a power interface, while primary power is conditioned at the input supply frequency.

When the AC input voltage or frequency is out of UPS preset variation limits, the UPS inverter and energy storage maintain continuity of load power within the stated output voltage/frequency tolerances. When main power is available, the load

is directly powered by the line while the UPS conditions line power to improve its quality, compensates for voltage surges and sags, provides VAR support, and corrects for line distortion and voltage unbalance.

In contrast to a double conversion UPS, the line interactive UPS uses a small fraction of the total power delivered to the load to condition line power and keep the energy storage fully charged. This approach leads to higher efficiencies on par with a standby UPS. Unlike the standby UPS, it is capable of providing a very smooth transition between power sources should the main source fail. This topology lends itself to multiple design variants. It can be implemented using rotating machinery exclusively, power electronics or both. The leading line interactive designs are rotary UPS with synchronous flywheel, rotary UPS with asynchronous/high-speed flywheel, kinetic UPS, and delta conversion.

Rotary with Synchronous Flywheel

Figure 3 shows an example of a rotary UPS using a synchronous motor/generator and a mechanical flywheel (FW) as energy storage. In this configuration, the genset, including prime mover and synchronous generator, is an integral part of the UPS system. Note that in all other UPS topologies, the genset is a separate part of the larger critical power system.

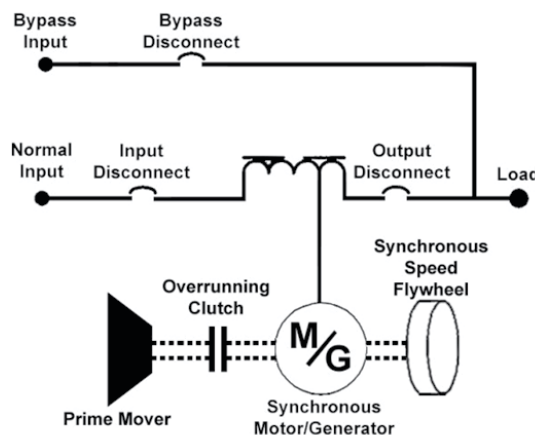


Figure 3: Rotary with Synchronous Flywheel

The synchronous motor/generator is traditionally a salient pole rotating machinery with motor and generator windings on a common stator. When line power is present, the motor keeps the flywheel fully charged with kinetic energy by spinning at the synchronous speed. The generator acts as a synchronous condenser providing VAR support and harmonic compensation of the line current.

When line power is not present, the flywheel uses its stored kinetic energy to provide the mechanical power required to drive the generator and power the load until the prime mover is brought up to speed.

The inherent advantage of this implementation is the “electrical inertia” that the rotating machinery adds to the system, which is unattainable with power electronics. This enables the clearing of large faults or starting motors without transferring to bypass operation.

A drawback of this design is the large mechanical inertia required of a flywheel to provide sufficient ride through time for a prime mover to start and come up to synchronous speed.

Rotary with Asynchronous/High-Speed Flywheel

To reduce the physical size of the flywheel while increasing the amount of kinetic energy stored, newer rotary UPS designs use high-speed flywheels spinning at several times synchronous speed. **Figure 4** shows the rotary design where a high-speed flywheel is mechanically linked to a separate asynchronous motor/generator.

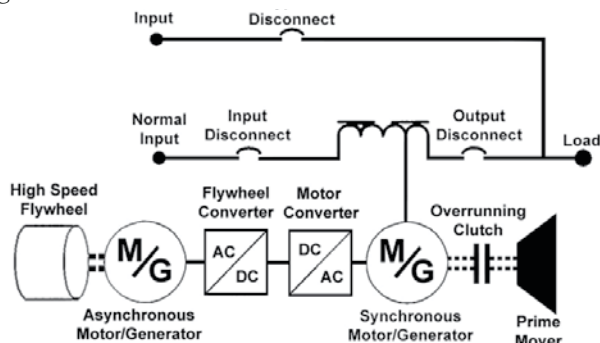


Figure 4: Rotary with Asynchronous Flywheel

Bidirectional power converters are used to control the transfer of power from the asynchronous motor/generator to the synchronous motor/generator, and vice versa. This adds complexity and cost, but longer ride through times become more feasible, which enable better control frequency as the flywheel discharges.

Operationally, the two rotary configurations are equivalent with the exception that, in the asynchronous case, the mechanical link between the flywheel and the synchronous generator

is replaced with an electrical one. As in the previous case, the prime mover and synchronous generator are still integral parts of this UPS system.

Kinetic UPS

A further evolution of the rotary with asynchronous/high-speed flywheel topology is the kinetic UPS shown in **Figure 5**. This rendition eliminates the synchronous motor/generator, directly connecting the inverter to two inductors in a choke configuration. Additionally, the high-speed flywheel is integrated with the asynchronous motor/generator.

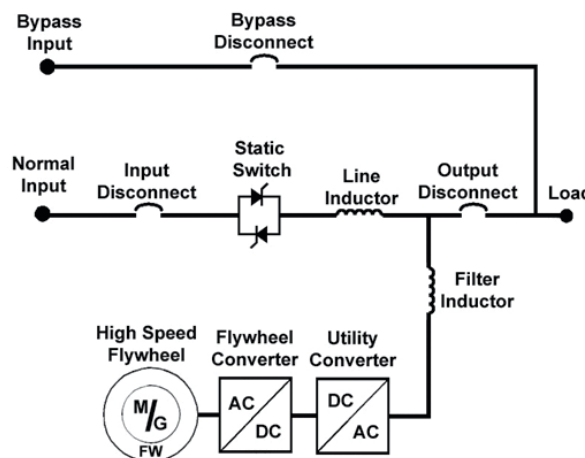


Figure 5: Kinetic UPS



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The assembly is partially levitated to reduce bearing losses and spins inside a vacuum chamber to minimize windage losses. The advantage of this design is higher efficiency, smaller size, fewer moving parts, higher reliability, and ease of maintenance. The disadvantage is the lack of “electrical inertia.” However, with proper inverter design and the incorporation of active filtering techniques, this topology is capable of very tight voltage regulation, good harmonic suppression, and low waveform distortion.

Frequency regulation is determined by the line frequency source when present. In energy storage or discharge mode, power quality is on par with a double conversion system. Note that the prime mover and synchronous generator are no longer part of the UPS system.

Delta Conversion

The final line interactive topology discussed is the Delta Conversion, as shown in **Figure 6**. In this design, two power converters are connected back-to-back through a common DC link established by the battery, which supplies energy storage.

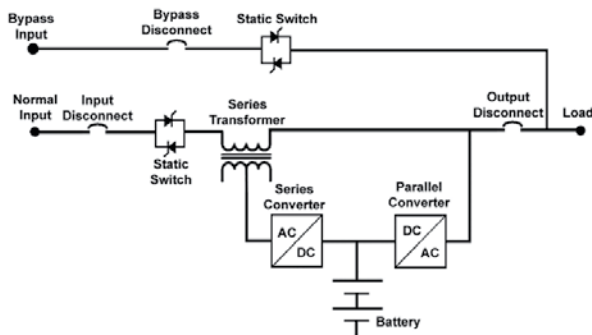


Figure 6: Delta Conversion UPS

When line power is present, the series converter regulates the line current through the transformer, and the parallel converter regulates the voltage on the load side. When line power is not present in energy storage mode, the UPS operates as a double conversion system with the parallel converter providing the entire power to load.

As in the other line interactive cases, this configuration when implemented with a proper converter design is capable of very tight voltage regulation, good harmonic suppression, and low waveform distortion. However, it is not capable of direct line frequency regulation when not operating in energy storage mode. It is also more efficient than a double conversion system since the load is directly supported by the line when not operating in energy storage mode, and the converter only spends energy conditioning line power, keeping the battery charged, and overcoming transformer losses, switching losses and other parasitic losses.

Deciding on a UPS System

With so many UPS types and topologies to choose from, it is natural to wonder which one is the best, but the answer is not straightforward. The characteristics outlined here are generalizations made in the aggregate sense, and specific attributes may be improved through specialized designs.

Table 1 provides a summary of key factors in the form of a Pugh matrix. It compares different UPS types to an ideal, tech-

nologically-neutral UPS that does everything well. A plus (+) sign indicates that the given attribute for the specific UPS compares favorably relative to the ideal UPS. For example, if the Unit Cost of a UPS has a (+) entry, it means that the unit cost of that UPS is lower (more favorable) relative to the Ideal UPS. Conversely, if an entry is negative (-), it means that the given UPS is not as good as the Ideal UPS for that particular attribute. A zero (0) indicates that there is no significant difference between the given UPS and an ideal one.

Attribute	Passive Bypass	Double Conversion	Rotary Synchron-FW	Rotary Asynchron-FW	Kinetic	Delta Conversion
Frequency Regulation	-	+	0	0	0	0
Operating Cost	+	-	-	+	+	+
Unit Cost	+	-	0	0	0	0
Power Quality	-	+	0	0	0	0
Size	0	-	-	0	+	0
Ride through time	0	0	-	-	-	0
Scalability	-	+	-	0	+	0

Table 1: Pugh Matrix of Primary Attributes by Topology

Nomenclature:

(-) not as good as base

(0) same as base

(+) better than base

“Base” is defined as a virtual UPS that does everything well

It would be intuitive to select the UPS with the most (+) and fewest (-) as the best one, but that would not necessarily lead to the correct answer. In fact, for each application, the attributes would be weighted differently.

For example, in some cases power quality may be more important than unit cost and carry a stronger weight. Assuming other attributes are not relevant, a double conversion UPS would be selected over a passive bypass. On the other hand, if unit or operating cost were the overwhelming factors, a passive bypass UPS would be favored.

In short, there are many factors that need to be taken into consideration when selecting the appropriate UPS for an application, and there is no one type fits all answer. The Pugh Matrix should be used alongside a set of weights capturing the importance of each UPS attribute in the context of the specific application or installation under consideration. Combining these two key pieces of information alongside other installation specific requirements will enable a designer to make the optimum UPS selection. ■

About the Author

Marcelo Algrain, Ph.D. is the Engineering Technical Steward for the Electric Power Division of Caterpillar, Inc. He has been with Caterpillar since 1997, holding engineering management and research positions in the Electric Power Division as well as the Technology and Solutions Division. He has been responsible for generator set control system developments, systems integration initiatives, and new technology explorations. Algrain holds 10 patents and has more than 35 scientific publications to his credit.



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Baltimore Hosts EGSA's 2011 Fall Conference

The Electrical Generating Systems Association (EGSA) held its 46th Annual Fall Conference at the Hyatt Regency Baltimore on the Inner Harbor September 18- 20, 2011. Conference Educational sessions were focused on this year's theme, "Using Technology to Bridge the Generation Gap."



2011 EGSA President
John Kelly, Jr.



2011 Communications and
Convention Committee Chairman
Ed Murphy



Keynote

The Fall Conference kicked off with a keynote presentation by Best-Selling Author Cam Marston. In his presentation Cam delineated the nuances of the four generations in today's workforce and their impact on commerce in the 21st century. His concepts are the result of more than a decade of extensive research inside businesses of all sizes and sectors. The results of this research have revealed significant correlations and generational differences that clients had not recognized. Mr. Marston revealed the predictable attitudes of each of the generations and uncovered how forward-thinking companies can adjust their current strategies to create future opportunities. Mr. Marston's keynote was amusing eye-opening, informative and memorable.

Mr. Marston's keynote was amusing eye-opening, informative and memorable.

Presentations

Social Media: What it Means

Steve Smith, President/Owner of EquipmentFX

Mr. Smith's Social Media presentation focused on Social Media, trend or fad, and why, and the business case for social media as it pertains to leads and sales. This session helped attendees understand the fundamentals of social media, how to apply social media in a practical way in business, along with discussing ways to monitor and monetize their social media efforts.



Medium Voltage Load Banks: Generating Success

Clayton Taylor, President of ComRent® International, LLC

This presentation focused on the benefits of using medium voltage load banks to commission and test medium voltage back-up generators in mission critical installations including Data Centers, Waste Water Treatment plants and Healthcare.

Power Trends for the Military Tactical Battlefield

Paul Richard, Acting Project Manager, Mobile Electric Power for the Department of Defense

Mr. Richard's presentation had the military "wow" factor combining an overview of current development and production programs for the Department of Defense (DOD) standardized power generation equipment and the Army Research and Development programs supporting power generation equipment. The presentation also provided an update on the Afghanistan Microgrid Project and the lessons learned from deploying microgrids in a tactical environment. The presentation also examined today's and tomorrow's trends for DoD military power and included a snapshot of upcoming business opportunities to bid on military power programs.





Remote Monitoring & Control of Standby Power Systems

*Steve Kent, Director of Operations
& Industrial Energy Applications of Lattice
Communications*

Having reliable back up to utility power is an essential part of doing business, but owning and operating complex standby power generating systems can be daunting. Customers often ask, "How do I know my standby power system will be ready when needed?" This is where remote monitoring has the most significant impact. Remote monitoring and control of critical standby power systems should be a key part of business continuity/disaster recovery plans. No one solution is right for every situation. This discussion focused on several different remote monitoring technologies, as well as some of the more practical implications of their use. Mr. Kent's discussion considered issues from the perspective of the owner operator, as well as the service provider.



Remote Monitoring: Talking to your Genset Via Cellphone

*Steve Evans, CEO/General Manager
of DEIF Inc. North America*

Remote monitoring of gensets has come a long way from the local horn and "Genset Trouble" alarm. Today you can use your cell phone to monitor individual operating parameters – fuel level or temperature, for example – of your genset.

Mr. Evans' discussion focused on the technology behind this level of automation and the possible new business benefit for our members. Examples of profitable operating business models were presented, followed by a Q&A session.



EGSA Exhibitor Showcase

In addition to offering educational sessions, EGSA's Fall Conference included the highly successful Exhibitor Showcase. The showcase allowed for a more traditional, formal dialogue between On-Site Power Manufacturers, attending Distributor/Dealers and Manufacturer Representatives.

Committee Meetings

The Fall Conference's scheduled EGSA Committee Meetings allowed for delegates' voices to be heard on topics important to both our Association and the On-Site Power Industry.

Social Events

In addition to the Business and Educational events, several social events took place. The President's Reception, Awards Banquet, Golf and Fishing Tournaments along with the Closing Reception allowed for a chance to relax and enjoy the company of fellow members and industry professionals.

EGSA 2012 Spring Convention

Mark your calendar, the EGSA 2012 Spring Convention is scheduled for March 25 through 27, 2012 in Austin, Texas. Information and registration details will be available at EGSA.org in the coming weeks. ■

Outgoing Directors Recognized for their Service to the Association by 2011 EGSA President, John Kelly, Jr.



Greg Walters of Hotstart
EGSA Director 2009 - 2011



David Brown of Kohler Company
EGSA Director 2009 - 2011



Mike Witkowski of Pritchard Brown
EGSA Director 2009 - 2011



First-time attendees with 2011 EGSA President John Kelly, Jr.

Right: 2011 EGSA President John Kelly Jr. welcomes the following new members to the Fall Conference:

Chuck Patellas , Catalytic Combustion Corporation; Tim Coons, Design by Initiative LLC; Doug McGaughy, ESSE - Energy Systems Southeast; Jijo Balakrishnan, GFS Corp; Jeff Harris, Harco Manufacturing Company, Inc.; Clinton Crownover, L-3 Westwood Corporation



EGSA New Members with 2011 EGSA President John Kelly, Jr.



Market Trends Committee Chairman, Kyle Tingle awards Paul Feld, Penn Power Systems a \$200 Visa Gift card for participating in the 2011 Fall Market Trends "Pulse" Report online survey.



Communication & Convention Committee Chairman, Ed Murphy awards Alex Georgopoulos from Aristo, Inc. a \$100 cash prize for submitting the 2011 EGSA Fall Conference theme idea.



Conference sponsor and ComRent President Clayton Taylor awards Doug McGaughy, ESSE - Energy Systems Southeast (a first timer and new member to EGSA) the second generation Apple iPad2.

2011 EGSA President John Kelly, Jr. awards EGSA bucks to David Brown, Kohler Company; Michael Pope, Süd-Chemie; Mark Steele, Technology Research Corp; and Steve Stoyanac, Chillicothe Metal Company for bringing in new members since the Spring Convention in March.





Brian Berg, Michael Pope and Kim Giles



Joan Daugherty, Diane Schroeder and Joni Walters



Mark and Terri Steele



Debbie and John Kelly, Jr.



Lesley and Vaughn Beasley



Mike and Nancy Witkowski and Brian Berg



Mark Steele, Raul Acosta and Chuck Patellis



Joe and Linda Hafich



Matt Barger and Ron Hartzel



Robin and Michael Schmitt



Warner and Donna Bauer with EGSA President John Kelly, Jr.



Brian Cleary with Paul and Sue Feld



Todd Sorensen, Brent Beissler and Bob Cain



Elizabeth and Michael Doggett with Rob Doud



Michael Doggett and Mark Davis



Larry Perez and Paul Wilhelm



Bob and Kim Hafich



Kyle Tingle, Jeff Hubert and Ben Pierson



Jacob Petty, Pam Combs, Todd Lathrop and Walter Petty



Phil Fulkrod and Steve Evans



Luke Jaynes and Tim Coons



Charlie Habic and John Hoeft



Ron Schroeder, Greg Walters and Herb Daugherty



Abby and Walter Petty, Cara Collins, Mike Petty and Jacob Petty.

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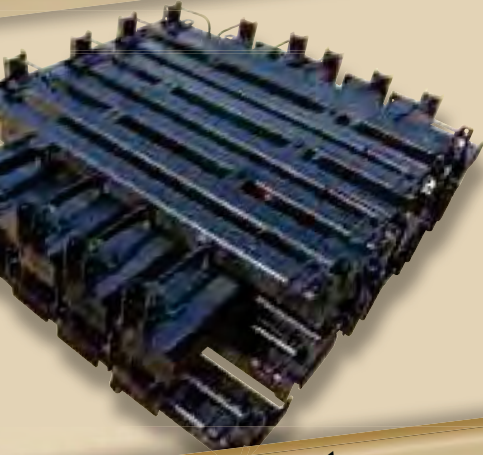
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2001-2002 Milestones



Weldments

73 Employees – \$6,012,000 Sales

2003-2004 Milestones



1,367 Tanks Sold

131 Employees – \$13,157,000 Sales

2005-2006 Milestones



9,699 Tanks Sold

75 Employees – \$22,544,000 Sales

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2007-2008 Milestones



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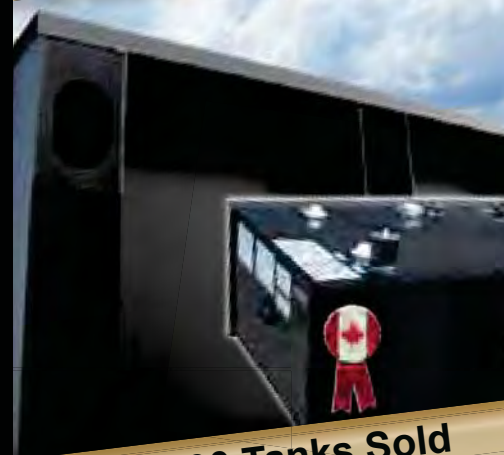
2009-2010 Milestones



9,619 Tanks Sold

95 Employees - \$ 21,144,000 Sales

2011-2012 Milestones



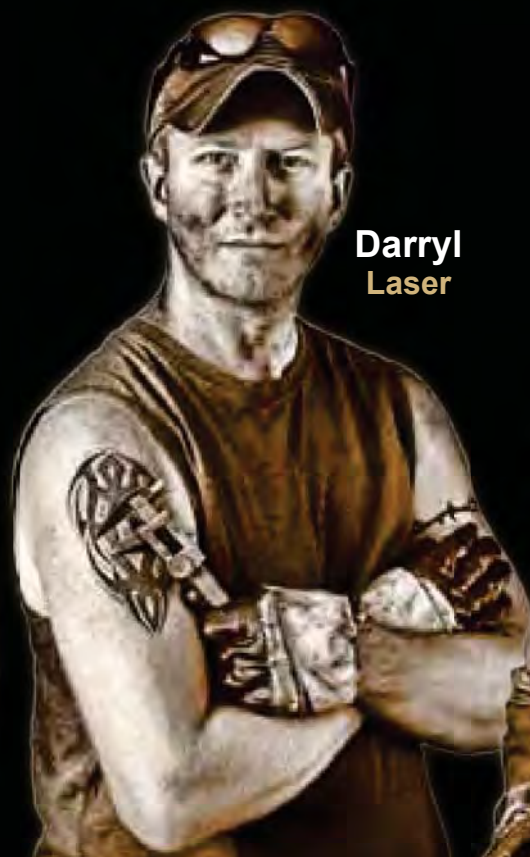
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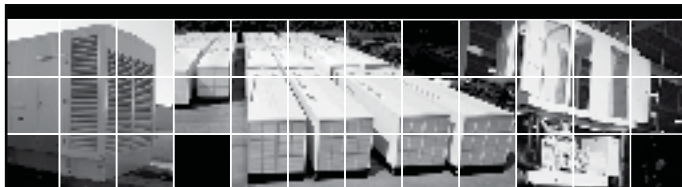
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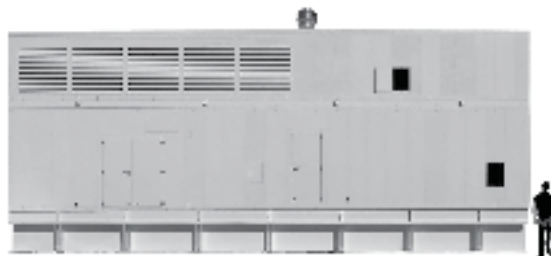
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Generac Goes the Distance in Training Industry Technicians

EGSA Member firm, Generac, adds EGSA Certified Technician Exam as Mandatory Requirement of being Generac Certified.

For more than 50 years, Generac has been manufacturing generator sets. The Generac line of products is one of the widest ranges of power products in the On-Site Power Generation Industry, including portable, RV, residential, commercial and industrial applications. The company has a firm foundation in leading the Industry with multiple On-Site Power Generation “firsts.”

From being the first to engineer affordable home standby generators and the first to develop an engine specifically for the rigors of generator use, Generac has remained focused on and committed to leading the industry in technology and service. The company also introduced the first cost-effective product line for the commercial market of small and mid-sized businesses.

Another “First” in the Industry

An EGSA Member since 1987, Generac leadership recognizes the value of having the industry support of the EGSA Technician Certification Program as a way to compliment their own internal rigorous training and certification program. “They have been extremely supportive of the EGSA Technician Certification Program since it was launched,” reports George Rowley, Director of Education for EGSA.

Generac developed its formal training program almost 5 years ago and it has continually evolved and improved. The program now includes mandatory Generac Certification for all technician levels, including Master Certification, Modular Power Systems (MPS), Industrial Technician, Commercial Technician, and Residential/Commercial Technicians. Generac’s mandatory certification program is comprehensive and distributor dealer supported. Every two years to the day, anyone who boasts the title Generac Technician must renew his or her certification and that includes a five-day commitment to training and tests at Generac’s Training Facility in Eagle, Wisconsin, 30 miles west of Milwaukee.

In order to achieve certification, technicians must pass the Generac Certification Program with a score of 80 or better. “While this type of program is fairly common in the industry among manufacturers, Generac is the first to add the EGSA Certified Technician Exam as a part of their training and certification program. If a technician does not pass the EGSA Certification Exam, they are not Generac Factory-certified,” says Rowley. “EGSA Certification is good for five years from the date that a technician successfully passes. Generac is taking the extra step and requiring the testing take place every two years.”

“Generac’s factory training is cutting-edge and it takes commitment on the part of our company, as well as the Distributor Dealers who sell, service and maintain our products and the technician. It’s a reflection of combined goals to make ‘factory trained technician’ a designation of genuine value and confidence. The Program also supports the core philosophy of Gen-

erac, to ensure our customers’ peace of mind by delivering a superior product and ownership experience,” according to Roger Schaus, Senior Vice President of Service Operations at Generac, “Adding the EGSA Certified Technician Exam to our program seemed like the natural progression for our company as a whole and we challenge our competitors to do the same.”

As of October 1, 2011, any Generac Factory-Trained Technician rated Industrial Technician or above will sit for the EGSA Certified Technician Exam as a part of their training program. An industrial technicians’ skill level is equivalent to 3 years of time in job. To help technicians prepare for the exam, the EGSA Study Guide will also be supplied. The test will be administered and proctored onsite during the five-day bi-annual training required of each technician.

The number of technicians taking the EGSA Certification test is projected at over 1200 technicians a year taking the exam. This is a monumental step towards an industry-wide EGSA Certification and it builds the momentum that the program needs to continue to gain industry recognition, including with the end-user.

“For the last year, we have been offering the EGSA exam at the tech’s request, but now, it is a requirement. With more than 4000 techs per year being certified by Generac, and 1200 plus being required to sit for the exam, this translates into tremendous growth for the EGSA Certified Technician program,” says Tom Wein, the ‘father’ of Generac’s program. “They must not only pass the test, but make a 90 or better to receive our manufacturer’s extended certification” Wein added.

“Training and experience levels are requirements of being a Generac distributor dealer. Our training is unparalleled in the industry and we have to work hard to maintain this leading edge. The addition of the EGSA Certification Exam to our program continues to set us apart from our competition and is a source of pride for anyone wearing the Generac name, as well as the EGSA patch, on their shirts!” adds Wein.

While the EGSA Certified Technician Program has several manufacturers that are currently approved testing facilities for the EGSA Certified Technician Exam, this partnership with Generac is the first in the program’s 5- year history to make passing the exam a mandatory requirement. “As a Generac Industrial Distribution Center, I am proud of what sets us apart from our competitors, but as the EGSA President, I hope that other manufacturers will follow suit,” confides John Kelly, Jr. CEO of Kelly Generator & Equipment, Inc. in Owings, Maryland.

The future of the EGSA Technician Certification Program only gets brighter from here. Have a story or an idea that you would like to share on the EGSA Certification Program? We’d love to hear from you! Please contact Kim Giles, EGSA Marketing Manager, at k.giles@egsa.org or (561) 750-5575 extension 203. ■



Evans Cooling Systems



In a side by side comparison done at a video shoot in October, notice that even at 365°, the Evans sample hasn't started to boil yet. Traditional coolant boils over 150° sooner.

Another in Our Series of Profiles of EGSA Member Companies

EVANS COOLING SYSTEMS IS...

....a privately held company headquartered in Sharon, CT. Evans also operates a fulfillment center in Pottstown, PA and a Sales and Marketing office in Suffield, CT. Evans is supported by dealers in 27 states as well as in China, the UK, Canada, Singapore, Italy, Peru, Belgium the Netherlands and Luxembourg. John W. (Jack) Evans and J. Thomas (Tom) Light have worked continuously on the development of cooling system technology design for over 25 years. They have pioneered innovative aqueous and non-aqueous cooling solutions for gasoline and diesel engines in applications ranging from race cars to trucks to generators. Evans Cooling Systems now have 21 issued U.S. patents, over 40 foreign patents and numerous patents pending.

For more information, visit www.evanscooling.com.

worked with some of the biggest engine manufacturers in the U.S. Their waterless coolants provide distinct advantages such as a higher boiling point, the elimination of corrosion, and the use of fuel saving strategies that are not available with traditional water based coolants. The end result is greater thermal efficiency, improved fuel economy, and longer engine life. The product line is low in toxicity, non-corrosive, and operates with low pressure.

A common misperception is that Evans formula is a gel, or something other than a liquid. Waterless doesn't mean "liquid-less", but it does mean "corrosion-less". Evans engine coolant is a patented formula consisting of a blend of glycols, with soluble additives and no water. The absence of water in Evans coolants prevents corrosion and avoids electrolysis.

In December 2010, Evans Cooling Systems introduced its waterless coolant for stationary engines at the Power-Gen Show in Orlando. The technology has not only been proven successful in reducing maintenance and operating costs, but also in improving performance and reliability. Evans waterless coolant enables an engine to operate continually in hot weather, under heavy loads, at high altitude, or at high power output without boil over. Evans waterless coolant helps prevent power interruptions and outages by avoiding overheating.

In hot climates, generators experience shut downs when the ambient temperatures don't allow efficient heat rejection. Backup generators are used when the primary generator shuts down and it requires a "cool down" period. The main difference in using the Evans engine coolant is the end to this type of shutdown or blackout period. Evans waterless engine coolant unlocks an extra cooling capacity that your system already has. When the

Evans Cooling Systems, Inc. has pioneered innovative aqueous and non-aqueous cooling systems for internal combustion engines for more than twenty five years. The Evans technology, used in both gas and diesel engines, is used in virtually every area of internal combustion engine cooling with systems running in heavy duty diesels, aviation applications, motorcycles, and gasoline engines of essentially every design. This technology is based on a very simple philosophy: To remove the problems associated with water, remove the water.

Water based coolants have been used to cool engines for over 100 years. In fact, all commercially available engine coolants on the market today are water-based except for Evans. Company founders John W. (Jack) Evans and J. Thomas (Tom) Light have worked tirelessly since the early 1970's on the development of cooling system technology design and subsequently have

coolant temperature can be safely raised, the difference between the radiator temperature and the ambient temperature (the delta T) is increased. This more efficient heat transfer from radiator to the ambient air allows the generator to run continuously in hostile environments using less fan power and saving fuel.

“Higher fuel prices, tighter emission regulations, and increasing maintenance costs continually challenge companies to find creative ways to decrease operating costs”, says Ed Coyle, Vice President and COO of Evans, “Evans offers an answer to that challenge, with a maintenance-free technology that saves money, helps the environment, and is a safer alternative to water-based coolants.”

Any organization relying on generators for primary or stand-by power, can achieve savings and improved reliability. In addition, Evans coolants help the environment by reducing emissions and eliminating the need for disposal. It is no surprise that engine makers as well as after-market manufacturers have been combating heat transfer issues with a multitude of modifications; larger fans, more efficient radiators, additives and applying performance limitations on engine design. By contrast, the Evans Cooling Technology has eliminated the problem!

In the spring of 2011, Evans formed a strategic alliance with Hydratech Technologies Ltd., a UK based company that specializes in heat transfer fluids for the Refrigeration and Air Conditioning, Geothermal and Solar sectors. Hydratech offers unrivalled technical knowledge of fluid thermodynamics and heat-

ing & cooling system design. Evans and Hydratech have formed Evans Cooling Systems UK (Evans UK) to market the waterless engine coolants throughout the UK and Ireland.

The rapid growth of the Asian markets, particularly in China, has opened opportunities for Evans technology in automobiles. Evans is now used in over 70,000 cars in China, providing performance and maintenance benefits and increasing engine life. The company has over 600 locations in China that sell and install the waterless coolant in new vehicles.

Evans continues its development of more efficient engine cooling systems. Research currently underway by Evans includes the production of nano-particles to improve the coolant's heat transfer capabilities. The objective is to produce nano-particles inexpensively and small enough to remain suspended for long periods in coolant liquids. An independent third party laboratory has tested the toxicity of Evans coolants demonstrating that Evans waterless formula sharply reduces the toxicity of the glycols. ECS is currently sponsoring in-vitro research using human tissue to determine the toxicity of its mixtures with regard to humans.

“Evans joined EGSA in 2010 and we look forward to a long and productive membership.” Ed Coyle adds, “We’re excited to offer a solution to On-Site Power Generating community that can save money, preserve natural resources and reduce hazardous waste.” ■

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Balance of Power

Cross-Curricular Approach, Internships Benefit Students In Penn College's On-Site Power Generation Major

By: Claude T. Witts, Instructor, Diesel Equipment Technology

The On-site Power Generation Major at Pennsylvania College of Technology, designed as a two-year program that includes a summer internship, was established in 2000 as a response to increasing industry demand for skilled technicians in diesel and electrical technology.

Discussion within the industry (via focus groups) and between two schools at the college – Natural Resources Management and Construction and Design Technologies – resulted in the creation of a “hybrid” program. Several CAT dealers (Alban, Cleveland Brothers, Ransome CAT and H.O. Penn) participated with cash and equipment donations to offset startup costs.

The cross-curricular approach provides students with a much more in-depth exploration of the on-site power generation process. Curriculum devoted to diesel engines, fuel and electronics is taught by the diesel faculty. Courses relating to power generation are taught by electrical instructors. Faculty and administration meet with advisory boards three times a year to discuss the program and determine if any changes are needed, which keeps the Major up-to-date with industry needs.

In 2009, the electrical power generation installation course was replaced with process control basics to give students more instruction on the control-panel side of the generator. Also that year, the name of the Major was changed from Electric Power Generation to On-site Power Generation to more accurately reflect its true focus.

During the first semester, students are introduced to the basic principles of electricity and the laws and formulas used to solve electrical problems. Study includes the principles of magnetism and their relationship to direct-current generators and motors and other electrical machinery. Additional laboratory work trains students to connect equipment and instruments.

In the second semester, students are introduced to alternating-current fundamentals and diesel-powered engines. Course work also includes problem-solving, current, voltage, impedance, reactance and power factor in series and parallel circuits. Diesel engine overhaul introduces students to the theory of engine operation, mechanical functions, component terminology and manufacturers' engine nomenclature. This course focuses on basic overhaul procedures necessary to service and repair diesel engines.

During the summer between the second and third semesters, the student completes an on-site power generation internship with a participating dealership. This on-the-job training enables the student to apply information gained in the first two semesters, as well as prepare students for the final two semesters. Comments from selected interns follow:

“I had my internship with Penn Power Systems in Buffalo, N.Y., working with a technician who does on-site service on standby generators. While Penn Power is an MTU/Detroit Diesel dealer, I had the

chance to see and work on every major brand that is out there and I feel this really added to my experience. I was able to participate in malfunction-diagnosing calls, preventive-maintenance services, and component replacement and repair. Having had the chance to work on generators has benefited me greatly ... in the power generation program. It makes it much easier in class having heard some of the terms already. Also I have been able to ask about things that I was exposed to that I wanted to learn more about. I feel the internship was a great asset and I am thankful to have had the opportunity.”

Kyle Norek (power generation student)

“While working for DynaTech (in Lebanon, PA) I have done such things as testing and installing generators, refurbishing generators, and rest-rapping generators to achieve a required voltage. I spent some time in the shop and some time on the road doing tech work. At DynaTech, they taught me as much as they could about generators with me only having very limited knowledge of how they worked.”

“It seems like everything I did that summer is now applying somewhere with my classes. From voltage regulators and field coils to transformers and transfer switches, my classes are filling in all the little holes that were left over the summer. Practically every day in class, I can remember something I worked on ... at DynaTech where that piece of information would have helped me to diagnose a problem or would have helped me to understand why we fixed or replaced what we did.”

Tim Funk (power generation student)

“(One of the) things that I gained from my internship that helped enhance what I learned through the PG program is being able to take apart a CAT HEUI fuel system and put it back together. Also I learned how important it is to load-bank a genset, which we will practice in ELT265, (and) how to switch a single-phase genset to a three-phase genset inside of the alternator. One last thing that was important to know at CAT was how to hook up two load-sharing gensets.”

George Bopst (power generation student)

During the third semester, students are introduced to diesel electronic fuel systems, which include the introduction to theory and operation of the different types of electronic fuel-injection systems used by the major manufacturers of diesel engines. Advanced electrical/electronic system principles, sensor types and functions, sensor testing, and schematics also are covered.

During this time, the students also are introduced to engines fueled by methane, natural gas and other gaseous fuels, with differentiation made between diesel and gaseous-fueled systems. Topics include the gaseous combustion process, types of fuels and compression ratios, fuel regulation and delivery, ignition system, temperature regulation, emission controls, preventative maintenance, and tune-up.

The third semester also includes a course in electrical motor controls. Students learn the design and development of relay logic diagrams for use in the installation, operation and maintenance of relay motor control systems for industry. The students also study the process control systems and related theories that govern the use of electronic intelligence to control a physical process. Topics cover electronic intelligence theory as applied

to microcontrollers and basic language programming, as well as the elements of the physical process, including the electronic components such as diodes, transistors, thermistors, LEDs, optical switches and operational amplifiers.

The fourth semester consists of an introduction to programmable logic control and electrical-systems analysis. Introduction to the understanding, programming and operation of programmable logic control and the utilization of such controls as an aid to effective production and quality-control processes for production line industrial control systems is highlighted. Practical application includes the programming and changes of operational programs and generated control commands.

The fourth semester also focuses on electrical-systems analysis and involves the students in a comprehensive program through laboratory experiments and report-writing to master the principle and operation of machines and devices that generate, transform and use electrical power.

"I am working at Cummins Power Systems LLC in Harrisburg as a Generator Tech. I enjoy my job and feel the PG degree from Penn College was a big help in my career. The basic generator theory and the trip to the Power Gen Expo with the classes we attended there through EGSA that the college had set up for us to attend were two points from the program that really stood out and I feel helped myself. I feel the PG program (is) a good program and I recommend it to anyone interested in the power-generation field."

Matt Forbes (former power generation student)

Caterpillar Inc. also has recognized the importance of finding skilled, entry-level technicians in the field for well over a decade. Caterpillar provides funds to the program each year for the purchase of equipment and new technology, as well as annual scholarships to on-site power generation students.

A sponsorship is a formal agreement in which the dealer provides tuition assistance and an internship site to the student. In return, the student agrees to work during school breaks, over the summer and for a specified period of time after graduation. It's a win-win situation for both the employer and the student. In fact, Penn College's research indicates that students who are sponsored by employers are less likely to withdraw, and, therefore, graduate at a higher rate than their non-sponsored peers.

"In my experience with Penn College power generation grads, they are always better-trained and more easily adaptable to the workforce than most other technical schools," said Shane Michaels, Service Supervisor for Cleveland Brothers Equipment Co.'s Power Systems Division in Milesburg, PA.

The program maintains a 100%, five-year average placement. Graduates from Penn College's on-site power generation program are working (or have worked) in areas from Antarctica to Alaska. ■

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MF=Manufacturer DD=Distributor/Dealer CI=Contractor/Integrator MR=Manufacturers Rep
EM=Energy Management Co. AA=Trade Publication AB=Trade Association AC=Engineer
AD=End-User AE=Service AG=Educational Institution AR=Retiree AF=Student

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Jeff Staten, General Manager
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Alaska Energy Authority AD

Anchorage, AK
Kris Noonan, Program Manager
State of Alaska agency building power plants in rural Alaskan communities.

Allied Generators. DD

Oakdale, MN
Roger Heath, Manager
We are a dealer in St. Paul, MN who service all brands of generators. We sell Kohler, MTU and Generac.

AVTEC - Alaska's Institute of Technology AG

Seward, AK
Kent Berkland, Department Head
We are a State run vocational school teaching wind, solar, hydro and diesel power generation to a majority of rural Alaskan communities.

Chattahoochee Technical College, North Metro Campus. AG

Acworth, GA
Mike Smith, Instructor
We are offering a diploma in Diesel Equipment Technology with a specialization in diesel power generation. The course offerings started with this fall's semester. Our first Graduate should be in the spring of 2012.

Emergency Energy Products Ltd. MR

Brampton, ON Canada
Gary Logan, Sales Manager
Represent - GE Digital Energy Transfer Switch and UPS's, Avtron Loadbanks, General Thermodynamics - Radiators, GT Exhaust - Silencers.

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Ryan Murphy, Sales Manager - Power Generation
GenAcc is a custom engineering and manufacturing company that builds a complete range of emissions control equipment for diesel and natural gas engines. GenAcc provides a full range of services including installation, permitting, and testing for all of our emissions equipment ranging from RICE NESHAP to Tier IV final systems.

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Romance, WV
Edwin Bogges, Owner
Sales, installation and service of power generation equipment. Sales and Service dealer for Generac, Kohler and Winco.

Modern Group Power Systems. DD

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John McClure, General Manager
We are a Generac dealer, we service all major brands of power generator equipment. Servicing the South Jersey, PA and Delaware areas.

North American Power & Controls, Inc. . . . CI

Benicia, CA
Daniel Drabec, President
Design, build, repair, maintain generators and associated equipment. Caterpillar, Avtron, Cummins products.

Polaris Industries, Inc. MF

Medina, MN
Ronald Inman, ORV Manager
Polaris Industries is a 2.0 billion dollar manufacturer of off road vehicles, snowmobiles, motorcycles and on road electric powered vehicles.

Seismic Source International AC

Houston, TX
Robert Simmons, PE, Vice President
Seismic Source provides third party listing of seismic certifications, factory inspections and qualification documentation reviews for ES and NOA. We also provide special inspections for non-structural components on site through a partnership with Petra Seismic Design, LLC.

Volusia County Fleet Management. AD

Daytona Beach, FL
Robert Gilmore, Operations Manager
Volusia County Fleet Management manages Volusia County government's fleet of vehicle equipment & 140 generators. Fleet Management has developed an in-house generator maintenance program.

Micah Dawson AF

Charlottesville, VA

Douglas Fessel AF

Highland Lakes, NJ

Nate Johnson. AF

Annvilla, PA

Jeffrey Kelly AF

Vacaville, CA

Jesse Kirkland AF

Fayetteville, NC

Michael Long AF

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Application for Membership

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Under the leadership of its Board of Directors and operating through its various committees and staff, EGSA strives to educate, provide networking opportunities and share relevant knowledge and trends with industry professionals including manufacturers, distributor/dealers, engineers, manufacturer representatives, contractor/integrators and others serving On-Site Power consumers.

1. Contact Information

Please type or print all information in upper and lower case (NOT ALL CAPS!)

Company _____
Address _____
City _____ State/Province _____
Zip/Postal Code _____ Country _____
Phone _____ FAX _____
Official Representative _____ Title _____
Representative's E-Mail _____ Company's Web Address _____
How did you hear about EGSA? ☐ Web site ☐ Powerline magazine ☐ Colleague ☐ POWER-GEN ☐ Other _____
Why are you joining EGSA? ☐ Certification Program ☐ CEU Program ☐ Power Schools ☐ Buying Guide Listing ☐ Other _____

2. Member Classification

Read the Membership classifications below and check the box that describes your firm's classification.

I. FULL MEMBERSHIP

- ☐ MF **Manufacturer Membership**
Any individual, sole proprietor, partnership or corporation seeking membership must apply for a Full Membership as a manufacturer if they meet one or more of the following criteria:
1. They manufacture prime movers for power generation.
 2. They manufacture generators or other power conversion devices producing electricity.
 3. They manufacture switchgear or electrical control devices.
 4. They manufacture or assemble generator sets, UPS systems, solar power, hydropower, geothermal, or any other power production or conversion system including related components or accessories for national or regional distribution.
 5. They are a wholly owned subsidiary of a firm that qualifies under rules one through four.
- ☐ DD **Distributor/Dealer Membership**
Any individual, sole proprietor, partnership or corporation actively engaged as a distributor or dealer for products listed under Manufacturer Membership may apply for Full Membership as a Distributor/Dealer. If an organization qualifies under Manufacturer Membership, it is not qualified under this section.
- ☐ CI **Contractor/Integrator Membership**
Any individual, sole proprietor, partnership or corporation actively engaged as a Contractor or Equipment Integrator of products listed under Manufacturer Membership, not bound by brand, geographic territory or contractually obligated as a Distributor/Dealer of a specific product. These firms typically purchase products from a Distributor/Dealer, Manufacturer or Retailer, adding value through installation, product knowledge, relationships, unique services, etc., and then re-sell the resulting product to an end-user.
- ☐ MR **Manufacturer's Representative Membership**
Any individual, sole proprietor, partnership or corporation actively engaged in the representation of products listed under Manufacturer Membership may apply for Full Membership as a Manufacturer's Representative. If an organization qualifies under Manufacturer Membership, it is not qualified under this section.
- ☐ EM **Energy Management Company Membership**
Any individual, sole proprietor, partnership or corporation engaged in energy management, including Energy Service Companies (ESCOs), Independent Power Producers (IPPs), Integrators, Aggregators, and other similar enterprises may apply for Full Membership as an Energy Management Company.
- ☐ **Associate Full Membership (mark appropriate category at right)**
Any individual, sole proprietor, academic institution, student, partnership or corporation meeting the requirements of Associate Regular Membership may apply for Full Membership at their option to enjoy the privileges of Full Membership, including the rights to vote and to serve on EGSA's Board of Directors. Initiation fees and annual dues will be assessed at the existing non-manufacturer Full Member rates.

II. ASSOCIATE REGULAR MEMBERSHIP

- ☐ AA **Trade Publication Membership**
Any trade publication dealing with the electrical generating systems industry or its suppliers may apply for Associate Membership—Trade Publications.
- ☐ AB **Trade Association Membership**
Any trade association made up of individual or company members sharing a common interest in the electrical generating systems industry may apply for Associate Membership—Allied Associations.
- ☐ AC **Engineer Membership**
Any consulting or specifying engineer may apply for Associate Membership—Engineer. Membership may either be held in the employer's name or individual's name under this classification. Individuals whose employer qualify as a Full Member, as described in the Full Membership section, do not qualify for this category.
- ☐ AD **End-User Membership**
Any individual employee of a company who owns or operates electrical generating equipment and/or related switchgear or components, whose responsibility to his employer includes planning, design, installation, supervision, or service of such equipment may apply for Associate Membership—User. Membership may either be held in the employer's name or individual's name under this classification. Individuals whose employer qualify as a Full Member, as described in the Full Membership section, do not qualify for this category.
- ☐ AE **Service Membership**
Any individual, organization or academic institution that offers services such as research, testing or repair to the electrical generating systems industry may apply for Associate Membership—Services. Membership may either be held in the individual's name or the organization's name under this classification. Individual companies whose employer or parent organization qualifies as a Full Member, as described in the Full Membership section, do not qualify for this category.
- ☐ AG **Educational Institution Membership**
Any postsecondary vocational-technical school or college offering on-site power generation-related instruction may apply for Associate Membership—Education Institution.
- ☐ AR **Retiree Membership**
Any individual who retires from a member company may apply for Associate Membership—Retired. This classification does not apply to any individual who is employed more than 20 hours per week.
- ☐ AF **Student Membership**
Any individual currently enrolled at an academic institution may apply for Associate Membership—Student.

Dues Schedule (Use for Section 3)

	Annual Dues	Initiation Fee	TOTAL
Manufacturer.....	\$825	\$200	\$825
Distributor/Dealer.....	\$285	\$100	\$285
Contractor/Integrator.....	\$285	\$100	\$285
Manufacturer's Rep.....	\$285	\$100	\$285
Full Associate Member.....	\$285	\$100	\$285
Energy Management Companies.....	\$200	\$200	\$200
Regular Associate Member.....	\$200	\$100	\$200
Retiree Member.....	Complimentary	\$0	\$0
Student Member.....	Complimentary	\$0	\$0



NOTE: A FULL 12-MONTH DUES PAYMENT MUST BE RECEIVED WITH THIS APPLICATION. The Association's Membership Year is January 1 through December 31. Dues payments that extend beyond the first Membership Year will be applied to the second year's dues.

FULL PAYMENT MUST BE RECEIVED WITH APPLICATION.

3. Membership Dues

(Please fill in the appropriate TOTAL amount from the above dues schedule.)

Membership Dues \$ _____

Membership Plaque (optional)** \$ 49.95**

On-Site Power Reference Book (optional)** \$ 125.00**

Florida Residents: Add 6% Sales Tax to ** items \$ _____

Continental US Residents add \$5 shipping/handling to **items. \$ _____

Non Continental US Residents should call EGSA

Headquarters for shipping charges for **items. **TOTAL** \$ _____

4. Payment Method

(Payable in US\$ drawn on U.S. bank, U.S. Money Order, or American Express)

☐ Check # _____ Amount Due \$ _____

☐ Money Order

☐ Mastercard ☐ Visa ☐ American Express

Card # _____ Exp. Date _____

Signature: _____

Print Name: _____

5. Products/Services

Please describe the nature of your business (50 words or less, NOT ALL CAPS). If you are a Manufacturer's Representative or Distributor/Dealer, please indicate which manufacturers you represent and/or distribute for; if you are a student, please provide the name and location of your school, your major and your anticipated graduation date:

Do you buy AND sell equipment? ☐ Yes ☐ No

Do you manufacture packaged equipment? ☐ Yes ☐ No

Available Codes:

01 --- Batteries/Battery Chargers	09 --- Generator Laminations	19 --- Silencers/Exhaust Systems/Noise Abatement
02 --- Control/Annunciator Systems	10 --- Generator Sets	20 --- Solenoids
29 --- Education	11 --- Generators/Alternators	21 --- Switchgear and Transfer Switches (Automatic or Manual), Bypass Isolation Switches, and/or Switchgear Panels
30 --- Emission Control Equipment	12 --- Governors	22 --- Trailers, Generator Set
04 --- Enclosures, Generator Set	13 --- Heat Recovery Systems	23 --- Transformers
05 --- Engines, Diesel or Gas	14 --- Instruments and controls, including meters, gauges, relays, contactors, or switches	24 --- Uninterruptible Power Supplies
06 --- Engines, Gas Turbine	15 --- Load Banks	25 --- Vibration Isolators
07 --- Engine Starters/Starting Aids	16 --- Motor Generator Sets	26 --- Voltage Regulators
08 --- Filters, Lube Oil, Fuel or Air	17 --- Radiator/Heat Exchangers	27 --- Wiring Devices or Receptacles
28 --- Fuel Cells	18 --- Relays, Protective or Synchronizing	
03 --- Fuel Tanks and Fuel Storage Systems		

Enter codes here:

Products sold: _____

Products rented: _____

Products serviced: _____

6. Sponsor(s):

A "Sponsor" is an EGSA Member who interested you in filling out this application. It is not mandatory that you have a sponsor for the Board to act favorably on this application; however, if a Member recommended that you consider membership, we request that individual's name and company name for our records.

Sponsor Name _____ Company Name _____

7. Official Representative's Authorization

Signature _____ Date _____

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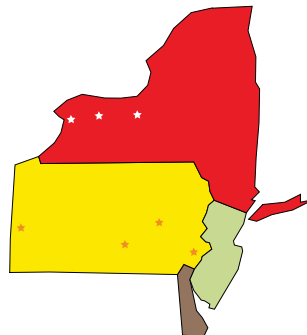
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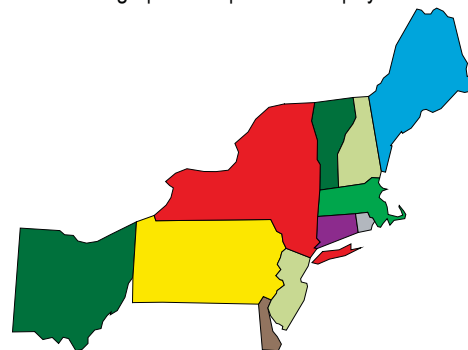
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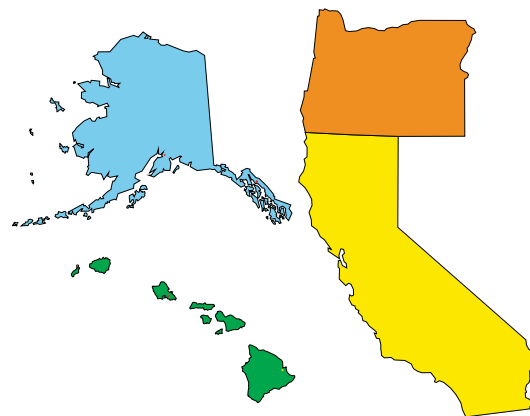
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Attention Technical College Students: Contact Us For Information On Our Internship Program

Connecting Across the Generations

By: Cam Marston, *Generational Insights*, Keynote Speaker, 2011 EGSA Fall Technical & Marketing Conference

In our high-tech world, with tools like email, mobile broadband, the World Wide Web and social media, marketing and selling should be easier than ever. Sales professionals can now reach more clients with more messages faster and at a lower cost than ever before, right? In reality though, these have become tools that make buying easier, but selling harder. As the saying goes, “knowledge is power,” and now most of the knowledge and power in the marketplace is available to the customer.

Clients have a wealth of resources at their fingertips. They can compare products, read reviews and ratings, and research companies and the sales professionals that represent them. They can choose when, where, and how they want to buy from among multiple sources. Customers can view price, quality and service comparisons with the click of mouse or the tap of a smartphone app. In some cases, through auction and discount web sites, customers are even being asked to name their own prices!

Making a Connection

As a sales professional in this environment, you need to do more than just give clients a reason to buy. You need to give them a reason to buy from you. Getting customers to choose to buy from you requires that you form a connection with them. In order to stand out among all the options facing customers today, sales professionals need to achieve a comfort level with their clients based on likability and respect. Perhaps above all, you need to avoid turning them off at the start.

Customers will respect you for your competence, professionalism, and knowledge of your product and your industry – because you do your job well. But how do you get them to like you? Well, that's a little more difficult to put your finger on. But it starts with sending the right signals and speaking the same language. It starts when you send signals to your customers that you understand them and how they like to be approached. That's what gets

them to listen. It continues when you speak a common language that allows you to connect with them. Then you are on your way to likability.

This is especially important in businesses that rely on long-term contracts and relationships, where successful sales and marketing are based on connections between account executives and clients. Clients should feel comfortable with vendors and service providers if they are to entrust them with significant accounts and purchasing decisions. Understanding a client's generational points of view is an indispensable tool in establishing that connection.

Connecting Across Generational Lines

It's usually easy to form a sales connection with people who are like us. We're all more comfortable working with people from our own age and background. In an earlier time, when most of the workplace and marketplace was dominated by one or two generations, it was often possible to do business mostly with people close to your own age. In our own time, that is no longer possible. In today's world, potential clients range from ages 18 to 80, representing four very diverse generations, all fully engaged in the marketplace.

In order to succeed, you must be able to connect with clients of all ages and that means bridging generational differences. Selling across the generations requires you to understand people with different generational perspectives, to identify and read their mindsets and to respond to them in a way that helps you to form that crucial sales connection. Every generation sees the world through a filter shaped by its formative experiences. Thus, generational peers are likely to “speak the same language”. On the other hand, sending the wrong generational signals creates a generation gap. For example, many accomplished sales professionals are Baby Boomers. The Boomers, like all generations, are



comfortable with one another and have a common frame of reference – a connection. When speaking to younger generations in the same way, though, they run the risk of becoming identified as “like my parents” by Generation X and the Millennials – creating a generation gap.

The Four Generations

Today there are four major generations in the marketplace and the workplace:

- Matures (born before 1946)
- Baby Boomers (born between 1946 and 1964)
- Generation X (born between 1965 and 1979)
- Millennials (born between 1980 and 2000)

Taking a broad overview of the Four Generations, “from 60,000 feet,” we can see what the major differences are. The older generations, especially the Matures, tend to be more “We” generations that value what’s good for the family, the group, the team, the community, or the nation and are more focused on long-term goals. The younger generations, especially the Millennials, tend to be more “Me” generations, valuing the individual and the short term. From the oldest to the youngest, there is a sort of continuum of values from “We” to “Me” that helps shape each generations’ behavior as employees, consumers, citizens and family members.

Thus, Matures and Baby Boomers think of themselves as part of larger groups or units. They value performance and quality over the long run. They esteem organizations with distinguished histories, with name recognition and with tenure in the marketplace. Millennials and Generation Xers, on the other hand, think of themselves as individuals. They are interested in how things will affect their lives, in things that make them unique and distinct and in developments that are happening now. This continuum of values from the older to the younger is even visible within the Baby Boomer generation. The older Early Boomers exhibit more of the “We” values while the younger Late Boomers have some of the “Me” qualities.

Understanding this generational continuum will help you apply generational insight in sales. Of course, birth date does not dictate personality. More than exact age, you want to know where your custom-

ers fit on this scale. What is their mentality or mindset? More “We” or more “Me”? More long-term or more here and now? More often than not, the outlook will fit the generation. In some cases, especially with customers on the “borderline” between generations, you can determine to right approach by figuring out which generational values form the most apt description of the customer in front of you. Think of the generational types of clients as representative of client types in general – types that mostly fit within certain age groups. In this way, generational insight in sales is simply insight that enables you to better read your customers and respond to their needs.

Connecting with the Four Generations

Each generation has a “personality”. A working knowledge of generational differences gives you some tools to begin each relationship on a footing of trust and understanding. Once you and the client are in that comfort zone, you will have a chance to offer your knowledge, expertise, and advice to someone who will have the confidence to act on it.

THE MATURES (born before 1946)

The Matures are the generation born before 1946. They either fought in World War II or were children during the war. The eldest members of the Matures remember the Great Depression and their memories of those times have made an indelible mark on them. Of the four generations, the Matures are the smallest in numbers (about 55 million). They are also the wealthiest, per capita.

Generational personality:

- Value dedication and sacrifice.
- Believe experience is and always will be the best teacher. And they have plenty of experiences to draw from to make good decisions.
- Value conformity, blending in, unity – a “We first” or team attitude.
- Have seen hard times give way to prosperity and vice versa.
- Prosperity came from valuing moderation. Still value it today.

To connect with the Matures:

Duty and sacrifice are at the heart of the

Mature mindset; accordingly, sales professionals must earn their business. Good intentions, snazzy packaging and a controlling persona are not generally effective with Matures. Matures usually do not have an inflated ego or sense of self-importance. They don’t expect special treatment but they do believe they have earned a certain amount of deference and respect for all that they have accomplished. They believe that experience is the best teacher and that they have plenty of it. They will respond best to those who recognize and respect their wealth of life experience.

- Show that you value what they’ve learned through their experiences.
- Ask for the “rules of engagement,” then follow them.
- Testimonials from respected institutions carry credibility.
- Quality is important. Emphasize it. Remember - your measure of quality and theirs may be different. Seek their definition and meet that definition.
- Standard and pre-packaged is good. (As opposed to unique and customized.)

BABY BOOMERS (born between 1946-1964)

The Baby Boomers are the generation born between 1946 and 1964 and were the largest generational cohort in the United States before the Millennials. Today the Boomers are in control. They run our local, state, and national governments; they are the bosses, supervisors, managers, and CEOs of most companies; and they dominate the workforce because of their enormous numbers. Through their enormous numbers (80 million), their intense work ethic and their competitive nature, the Boomers moved productivity in US to the forefront of the global community. Boomers today are still working as hard as they’ve ever worked, but some are asking themselves if their intense work ethic has paid off in the way they had hoped. The Boomers are evolving today and, in the second halves of their lives, will live with a different focus.

Generational personality:

- Defined by work ethic, even “workaholic”.
- Competitive.
- Believe success is visible: trophies, plaques, certificates, lifestyle rewards.

- Optimistic.
- Avid and enthusiastic consumers.
- Defined by their jobs.
- Believe they can make a difference: think of "We are the world; We are the children."
- Two consistent Boomer generational themes: 1. Forever young, and 2. Rebellion

To connect with the Baby Boomers:

Boomers are the original 'Me' generation, with a self-motivated take on life. Boomers have a work ethic measured in face time. Commitment to "team" is paramount and face-to-face skills are critical to success.

Boomers seek products and services that help them regain control of their time and that serve as a personal demonstration of their own success. If you are able to offer customization to fit their exact needs, you will have an edge. Do not enter the conversation assuming you already understand their needs – Ask.

Many Boomers are adept at technology, but still value the human touch. To get to the yes with Boomers, you must demonstrate, in person, your willingness to go the extra mile. Appeal sincerely to their sense of ego and then flat out ask for the sale.

- Your product/service or working with you should feature/emphasize some time saving elements.
- Your product/service allows them to gain control of their surroundings.
- Be careful of technology as the singular solution – be sure they are comfortable with it.
- Help them feel victorious - they are competitive and want to win.
- Provide more opportunities for more positive experiences.
- Join their team - teams are important.
- Customize for the individual - the first of several "Me" generations.
- Appeal to nostalgia of the "wonder years."

The Boomers are competitive, like to win and like to be rewarded for it with visible signs of their success. Is there a Thank You gift that they can subtly display in their office or home? A nice pen? Paperweight? Golf shirt?

The Boomers tend to be optimists. They're largely upbeat and prefer opti-

mistic and upbeat people, even more than most. Get your smiles and your optimism tuned up for your Boomer meetings. Not Pollyanna, mind you. Optimistic.

"Team" means more to the Boomers than other generations. You're not a vendor or an agent, but a teammate.

Boomers are of two minds on technology. They recognize that technology is now ubiquitous, but a good number aren't convinced it has made things better. Before promoting any technological components of your service, understand your client's stand on technology and, if they're ambivalent, do your best to focus on the other advantages and benefits of your services.

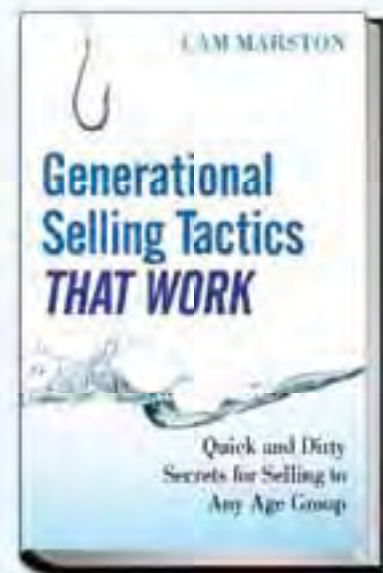
GENERATION X (born between 1965-1979)

Members of Generation X were born between 1965 and 1979 and now number nearly 60 million. They have often been stereotyped as "slackers" and characterized as unmotivated, lethargic, sarcastic and irreverent. As youth, they were told that they would be the first generation in the nation's history that would not be as successful as their parents. Whereas to the Boomers and Matures, institutions such as the government, the church or the employer still matter, to Xers, they have never been deserving of anything but skepticism. "There is nothing we can count on in the future," they say, "so we'll focus on the short term and make sure each day has significance." It is not an attitude of irresponsibility. In fact, Xers have willingly shouldered the responsibility for their day-to-day well being that they don't trust anyone else to provide and have turned into productive workers and effective leaders.

Generational personality:

- As youth, were taught to question authority.
- Have no shared heroes.
- Somewhat disdainful of Boomers: "Lots of noise, but what did they really do?"
- Began the trend of parents and children as friends.
- As children, were viewed as a hardship on the family.
- Somewhat cynical and pessimistic.
- Shorter time horizons.
- Have taken a "carpe diem" approach to their lives.
- "Prove it to me" attitude.
- They don't buy; they stalk purchases.

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To connect with Generation X:

Gen Xers have learned to be skeptical of just about everything. Sales professionals are high on that list. View your encounter as an information exchange, not a sales call. Be prepared to answer "why?" and to refer them to additional, unbiased resources. Address their innate cynicism with back-up plans for the inevitable time when a problem arises.

Xers are the "carpe diem" generation. They look to the short-term horizon. They dislike hierarchy, prefer transparent communication and value efficiency. They want to control the decision and the sale. They dislike standard, predetermined solutions. They embrace technology and use it in most aspects of their lives – including the comparative analysis of your company.

After you have answered all their questions, leave the ball in the Xers' court. They need space to make a decision.

- List all the available products, services, options, solutions. Everything.
- Offer short-term solutions and short term, achievable goals.
- But... back up plans. Plan B, C, and D...
- May want an uncanny amount of involvement in the sales process.
- Technology is important as a research and communication tool.
- "Live for today but prepare for tomorrow."
- Skeptical of too much advertising/hype/promotion. Sell the steak, they'll see right through the sizzle.
- Peer to peer testimonials are golden. About you, not the product.
- Be prepared to answer "Why?" a lot. This is not an attack on your credibility.
- You'll have to prove you are an authority. It is not granted.
- Educate them.
- Have fun doing the job. No hard sales.

The Xers are the most cynical generation. They don't trust experts until they prove themselves, not with a lengthy résumé, but with recent accomplishments. Be prepared to answer, "What have you done lately?"

Generation X probably won't want to be courted. They are more interested in their time than in business relationships. To become their vendor, prove your ability to do things right and quickly, not by spending

an afternoon on the golf course with them.

Back-up plans are more important to Gen Xers than others. What will happen if Plan A doesn't work? Present proposals that have a Plan B ready if needed. No need to get into detail; just let them know you have it.

Peer referrals are important to Gen X. They want to know how you perform, as much as your portfolio or your company. When you have a good connection with a Gen X client, consider offering him or her as a reference.

Gen Xers are often suspicious of "experts" and you, with your experience and background, are an expert. When you offer them a single solution they may suspect that 1) you offer this to everyone you meet regardless of their needs or 2) there is an internal promotion and you'll sell this regardless of whether they really need it or not. Therefore you need to offer options.

MILLENNIALS (born between 1980-2000)

Millennials were born between 1980 and 2000 into a world of ubiquitous technology. For the majority of their lives, they saw a growing economy and have been slightly disillusioned by the Great Recession. They make up the largest generational cohort, numbering about 85 million. The recent economic downturns are the first change in the nation's economic pace that they have experienced. Children of the Boomers and the oldest Xers, the Millennials have lived protected by their parents. Threats to them are of a different variety than any of the other generations have lived with as children – rogue individuals with nuclear weapons, unchecked violence from their peers, and terrorism in their home nation. The parents' response is to insulate and protect their children, to carefully guide them through life, and to constantly build their self-esteem.

Generational personality:

- Optimistic.
- Programmed. Well cared for.
- Group and peer oriented.
- Busy and stressed.
- Like Gen X, grew up as their parents' friends.
- Are not yet adults, but are not adolescents either.
- Ambitious but appear directionless.
- Crave self esteem.

To connect with Millennials

Build rapport with Millennials by recognizing their individuality and accomplishments – self-esteem is important to them. They live in a digital world – texting, email and social media are musts.

Millennials want to be like their peers, but with a twist. Peer testimonial is critical to the successful sale with this generation, as is good corporate citizenship. They want to feel good about their decisions within their peer group and on a global scale. They want to feel unique.

Millennials gravitate to mentors who can help them achieve their goals and they seek open, constant communication. Be authentic – don't try to fake youth or "cool." Be a non-stressful resource and helpful guide.

- Your service must have an immediate application - instant gratification.
- Must be unique to them. Want what their friends have and what their friends are doing with a unique twist.
- Spend time with them - get to know the individual - answer questions - become a non-stressful resource.
- "Sensitive to my needs."
- Individual relevance - "Why is this important to me?"
- Peer to peer references are valued.
- Admire them as individuals. "I'm impressed by you..."
- Technology is assumed, considered essential, and not feared.
- Acutely aware of what others have and are doing. More likely to share private information.

Millennials don't represent the same opportunity as Generation X or the Baby Boomers – yet. They haven't reached the prime of their careers and many are still reliant upon their parents. However, they will be very influential in the near future as they progress in their careers and inherit responsibilities and wealth from older generations. They are worth some attention right now.

Keep in mind that they move in packs – so target them as a herd. If you can get in front of a group of them, they'll likely think of you when choosing a vendor.

This is the most individualistic generation – they are uniquely individualistic within their herds, odd as that may seem. To best develop rapport and give them

confidence in you, it is smart to tactfully acknowledge this.

This generation regards personal information much differently than older generations. They share info more freely and may know the “nitty gritty” details of friends’ business and lives.

Millennials also put great faith in peer-to-peer referrals. If you have some successful relationships with some Millennials, ask them if they will speak to others about you. It will mean a lot.

Like Gen X, Millennials will screen you before doing business. Once you’re on solid footing, your knowledge of your client and his/her world will pay off in many ways and for a long time. Spend time getting to know them.

Generational Selling

Using these kinds of generational insights for selling and marketing can help you connect with clients you might otherwise have lost. A customer’s decision to buy is usually approximately 85% emotional and 15% rational. In a crowded marketplace with many buying options, the typical customer

spends as much time deciding from whom they will buy as they do deciding what they will buy. The connection that helps you make the sale can be elusive, even for the friendliest and most outgoing account executive. Of course, no one can be all things to all people, nor can a sales professional expect to be every client’s best friend. If an account executive can earn a little likability by connecting across generational lines, it will go a long way towards accomplishing some key steps in the sales process:

- Quickly connecting – getting the client to “lean forward” to at least listen to what you have to say.
- Establishing a relationship – helping the customer feel comfortable enough so that you can communicate about what he or she really wants.
- Avoid turning them off – avoid inadvertently saying or doing things that make them uncomfortable.
- Earning the last look – ensure that the client comes back to you at the end of a competitive process to give you the last chance to make the sale.

Understanding and being sensitive to a client’s generational background, biases, and preferences – and then treating them appropriately – will go a long way toward helping make the crucial connection that gives you the opportunity to close the deal. ■

About the Author

Cam Marston studies generational and demographic trends and interprets the trends for businesses working to increase their market share. His latest book, *Generational Selling Tactics that Work*, is available through all major book outlets or off his website: www.generationalsinsights.com. He can be reached at 251.479.1990.



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EGSA Announces 2012 Board Election Results

The Electrical Generating Systems Association (EGSA) has announced the election of officers and three new Board members for 2012.

"The Association would like to thank those leaving its Board of Directors and express its appreciation for their valuable contributions and continuous support," says Jalane Kellough, EGSA Executive Director. "At the same time, EGSA would also like to welcome those newly elected to the Board and thank them for taking an active role in the Association."



2012 EGSA
President
Michael Pope

The new EGSA officers are:

- PRESIDENT — Michael Pope, Süd-Chemie, Inc., Needham, MA
- PRESIDENT-ELECT — Debra Laurents, Cummins Power Generation, Minneapolis, MN
- VICE PRESIDENT — Vaughn Beasley, Ring Power Corporation, St. Augustine, FL
- SECRETARY-TREASURER — Ed Murphy, Power Search, Inc., Hampstead, NH
- IMMEDIATE PAST PRESIDENT — John Kelly, Jr., Kelly Generator & Equipment, Inc., Owings, MD

Also elected to the Board of Directors were: Steve Evans, DEIF Inc., Fort Collins, CO; Todd Lathrop, Eaton Corporation, Arden, NC; and Kyle Tingle, John Deere Power Systems, Waterloo, IA.

They will join the following directors who remain on the Board through the coming year: Brian Berg, Bergari Solutions, LLC, Rosemount, MN; Brad Fennell, Chillicothe Metal, Chillicothe, IL; Robert Hafich, Emergency Systems Service Co., Quakertown, PA; Larry Perez, Basler Electric Co., Highland, IL; Ronald Schroeder, ASCO Power Technologies, Florham Park, NJ; and Mark Steele, Technology Research Corp., Clearwater, FL.

The new Board Members will assume their offices on January 1, 2012. ■

EGSA Email Archive

Have you missed one of our emails? Now you can view the EGSA Email Archive to make sure that you are up to date on all communications from us.

Please visit <http://archive.constantcontact.com/fs047/1102546510515/archive/1102651699251.html> to access the EGSA Email Archive.

If you are a member and would like to be added to our mailing list, please send your contact information to e-mail@egsa.org. ■



EGSA Schedules Six On-Site Power Generation Schools in 2012

EGSA has announced a schedule of three basic and three advanced On-Site Power Generation Schools for 2012. For full details and registration information, For information, visit www.egsa.org. ■

Basic Schools

- February 21-23 – Hyatt Regency Dallas, TX
- June 12-14 – Hyatt Regency Rochester, NY
- October 16-18 – Hyatt Summerfield Suites/Old Town (Scottsdale), AZ

Advanced Schools

- April 23-26 – Hyatt Regency Atlanta, GA
- August 6-9 – Hyatt Rosemont (Chicago), IL
- December 10-13 – Orlando, FL -Hotel TBD*

*To be held concurrently with Power-Gen 2012



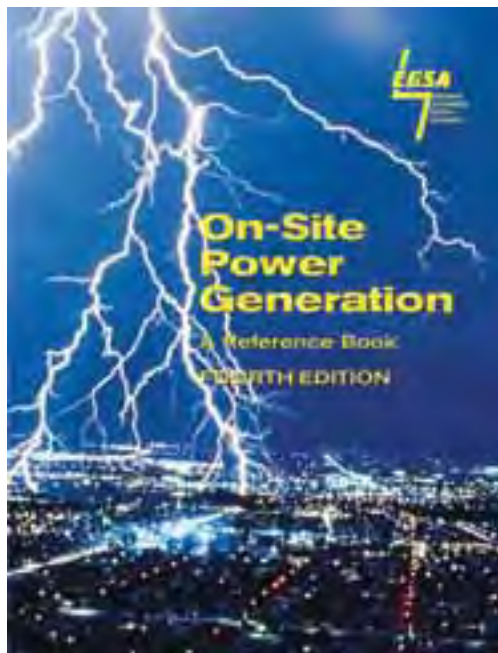
Austin, Texas is the Venue for EGSA's 47th Annual Spring Convention

EGSA's 2012 Spring Convention will be held in Austin, TX. The Convention has been scheduled for March 25 -27. The Spring Convention's theme "Finding Opportunity in an Uncertain Environment" is designed to focus on the challenges faced in today's business landscape.

The host hotel for this year's Spring Convention is the Hyatt Regency Austin, set on the shore of Lady Bird Lake. This ideal location in downtown Austin lets you experience the best of the eclectic and progressive city. Catch the display at the famous "Bat Bridge," right across from the hotel. Wander across Congress to find yourself immersed in the entertainment districts – including SoCo, the Warehouse District, 2nd and Sixth Streets.

As an exhibitor or attendee, you will find the Exhibitor's Showcase to be the ideal setting for Distributor/Dealers, Manufacturers, and Manufacturer's Reps to network with industry partners.

We look forward to seeing you in Austin! For additional information about the Spring Convention please visit, www.egsa.org. ■



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EGSA's *On-Site Power Generation: A Reference Book* is widely regarded by On-Site Power professionals as the "bible" of the On-Site Power Industry.

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Full-time experienced generator service salesperson in Phoenix, AZ. Territory includes southern Nevada, Arizona and New Mexico. A successful candidate will need a working knowledge of power generation equipment and strongly driven to seek out new customers. We offer competitive base and commission rates, along with a full complement of benefits. Please fax resume to (602) 233-2620.

Emergency Generator Sales

We are growing! Genset Services, Inc., the top tier industrial distributor for Generac generators in South Florida, has an opening for an outside salesperson. Candidates should have a minimum of 3 yrs sales experience in emergency power equipment or in a related field. We offer a competitive compensation package that includes a base salary, plus commission, car allowance, health insurance, vacation and investment plan. Please forward your resume with cover letter and salary requirements to matt@gensetservices.com.

Experienced Generator Technician

Weld Power Service Co. of Auburn, MA has an immediate opening for an experienced Generator Technician. We are looking for a highly motivated, self-sufficient technician, able to assist our expansion efforts. Candidates must have a minimum three years of experience in servicing industrial generator sets. Must be able to service, repair, troubleshoot both gaseous and diesel engines, as well as alternator ends, controls and automatic transfer switches. Weld Power Services Company offers industry competitive wages, paid vacation, holidays, 401K contributions, medical, dental and life insurance coverage. Starting pay based on experience (\$16-\$28/hour). Please email your resume and cover letter to weldpowerjobs@gmail.com.

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EGSA Job Bank Guidelines

EGSA will advertise (free of charge) EGSA Member company job openings in the Job Bank. Free use of the Job Bank is strictly limited to companies advertising for positions available within their own firms. Companies who are not members of EGSA and third-party employment service firms who service our industry may utilize the Job Bank for a \$300 fee. Blind box ads using the EGSA Job Bank address are available upon request; company logos may be included for an additional fee. EGSA reserves the right to refuse any advertisement it deems inappropriate to the publication. Please send your classified ad (limited to approximately 50 words) to: EGSA Job Bank, 1650 S. Dixie Hwy, Suite 400, Boca Raton, FL 33432. Or, send it via e-mail it to: J.Kellough@EGSA.org

Penn Power Systems

Penn Power Systems, an industry leader with power systems sales of MTU Onsite Energy products is seeking qualified sales people for central and eastern PA. Individuals need to possess a high drive to succeed and be comfortable discussing projects with engineers, contractors and end users. Penn offers a very aggressive salary and compensation package, along with benefits and the necessary sales tools to succeed. Please send resumes to jtiffan@pennpowersystems.com

Generator Technicians

Due to our continued growth, Central Power Systems & Services, Inc. has immediate openings for generator technicians at several of our Missouri, Kansas and Oklahoma facilities, with immediate needs in Kansas City, MO and Wichita, KS. Ideal applicants will have working experience with diesel generator sets, gaseous generator sets, and automatic transfer switches. **EGSA Certified preferred**, but not required. We offer a strong base wage and a full benefit package (including FREE MEDICAL & LIFE insurance) and PAID RELOCATION, depending on experience and skill set. Fax a cover letter, salary requirements and your resume to 816-781-4518 or e-mail it to jobs@cpower.com. EOE

Rental Sales

Kelly Generator & Equipment, Inc. is seeking an experienced RENTAL SALES person to join our Team. We are a full-service distributor of emergency standby and prime power located in the mid-Atlantic region: Delaware, Maryland, Washington DC, Northern Virginia and West Virginia.

- Develop strong relationships with electrical and general contractors, home builders, event companies, industrial and commercial end users and rental houses.
- Focus will be on the rental (and sales) of mobile generator sets, as well as renting load banks.
- Sell service contracts

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EGSA Certified Technicians Preferred.

Generator Technician

Kelly Generator & Equipment, Inc., the mid-Atlantic leader in standby electrical generators is seeking experienced generator technicians. We are a full-service distributor of emergency standby and prime power located in the mid-Atlantic region that covers Delaware, Maryland, Northern Virginia, West Virginia and Washington, DC.

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EGSA Certified Technicians Preferred.

Generator Service Technicians

Buckeye Power Sales, the oldest signed Kohler distributor, seeks service technicians to perform PM's, start-up, & warranty work on power generators in Ohio and Indiana. Must have knowledge of gas & diesel engines, A/C D/C circuits, 1+ years experience with generator equipment, able to troubleshoot from wiring schematics, knowledge of NFPA 70E; knowledge of Kohler a plus. Must have clean driving record, drug screen and background. Travel to customer sites; able to drive manual transmission a plus. Company vehicle provided. Competitive pay & full benefits package. Apply: resumes@buckeyepowersales.com. No phone calls or agencies please. E/O/E Drug-Free Workplace **EGSA Certified Technicians Preferred.**

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Generator Service Technicians

CJ's Power Systems in Florida, a distributor for MTU Onsite Energy, is currently seeking qualified technicians throughout the State. Job includes: performing planned maintenance, diagnostics, repairs, and startups of generators. Knowledgeable, computer skills, clean driving record a must. Excellent pay, medical, and other benefits. E-mail resumes: jobs@cjspower.com; fax to 352-732-0606 EGSA Certified Technicians Preferred.

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Generator Technician

Full-time experienced generator field technician needed for Central Florida/Lakeland area. Applicant must have diesel engine experience and transfer switch knowledge, preferably EGSA certified. Job includes performing preventive maintenance, repairs, and startups of generators. Clean driving record a must and applicant must pass drug screening. Competitive wages and benefits. E-mail resumes to skapparos@suregen.com EGSA Certified Technicians Preferred.

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Central Power Systems & Services, Inc. – seeking generator salesperson based out of Kansas City. This position will work from our new stand-alone facility dedicated to the generator business and will be focused on promoting MTU OnSite Energy products. We offer a strong base wage, incentive program and a full benefit package (including company car, gas allowance, expense card, FREE MEDICAL insurance, FREE LIFE insurance, paid vacation, profit sharing and 401(k), etc.) and PAID RELOCATION depending on experience and skill set. Fax a cover letter, salary requirements and your resume to 816-781-4518 or e-mail it to jobs@cpower.com. EOE

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Generator Service Technicians

We are growing! Genset Services, Inc. is seeking qualified generator technicians for our Central and South Florida branches. Working knowledge of Diesel and gaseous engine-driven generator sets is required including service/maintenance, troubleshooting/repair of AC and DC electrical and control systems, as well as strong computer skills. Ideal candidate will have neat appearance and clean driving record. We offer a competitive compensation package, including a company vehicle, health insurance, vacation and an investment plan. Please forward your resume with cover letter and salary requirements to keith@gensetservices.com EGSA Certified Technicians Preferred.

Power Solutions Manager

Generac Power Systems, North America

The Power Solutions Manager is responsible for the promotion and technical sales support of Generac Industrial Products with a focus on the Modular Power Systems solutions. You will assist our regional sales managers and dealers on specific projects and work directly with key electrical engineering and construction firms to achieve a Generac product being specified and sourced. In addition, the PSM will conduct training seminars for the electrical engineering community, utilizing a pre-package curriculum, Professional Development Series Seminars. In this role, you can expect up to 70% travel and have the ability to work from a home office. BSEE/BSME preferred with 8-10 years technical sales/support and a strong electrical aptitude. Power Generation experience is a plus. Visit www.Generac.com/about/careers. Generac is an EOE.

Generator Field Technician-Experienced

ACF Standby Systems seeks full-time experienced generator field technicians for openings in the Orlando/Miami, FL areas. Requires advanced knowledge of standby generator systems. Minimum 5 years experience. Working knowledge of 12 & 24 VDC controls. Company offers a full comprehensive benefits package. Competitive wage, company vehicle, laptop and cell phone for qualified candidates. Send resumes to careers@acfpower.com or fax to HR at 813-621-6980. EGSA Certified Technicians Preferred.



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The Fleet Management Department of Pinellas County, FL has two openings for Electro-Mechanical Technicians in the Tampa Bay area. Salary Range: \$36,046-\$56,056. We offer excellent benefit and compensation packages. For more information about these positions or the requirements to apply, please visit our website at <https://employment.pinellascounty.org> EOE/AA/ADA/DFW/VP

Equipment Sales

Kentech Power is looking for a full-time power generation equipment salesperson. Potential candidates should possess previous sales experience, preferably in the power generation equipment field. They must be highly motivated and customer focused. They must be willing to work in the San Antonio / Austin area. Interested candidates should send their resume @ jobs@kentechpower.com or by fax to 210-946-2473.

Generator Field Service Tech

Kentech Power has immediate openings for a Generator Field Service Tech located and operated in Houston and San Antonio Texas. Kentech is seeking an experienced generator technician who is be capable of troubleshooting, repair and maintenance of diesel and gaseous generator sets and associated switchgear. Candidate must have 3 - 5 years experience, be a team player, clean license and background. Benefits: health, dental, paid vacation/holidays. Interested candidates should send their resume @ jobs@kentechpower.com or by fax to 210-946-2473.

Generator Sales Territory

Luby Equipment Services, a St Louis-based company is looking for a self-motivated, aggressive salesperson for our Illinois territory. This is a great chance for a person to build a strong customer base. Luby Equipment is the industrial dealer for Generac Power Systems. This opening offers a great base pay plus commissions on sales. Company car and travel expenses are all covered. Luby Equipment is a very solid, privately-held company. Heavy equipment, stand-by power and oil field services are our main lines of business. Please send your resume and we can start showing you a bright future. Send resume to tsommer@lubyequipment.com.

Regional Service Sales Consultant

Kentech is a world class leader in Power Generation and we are seeking an experienced Texas regional service sales consultant. This is a great opportunity for an aggressive person, looking for upward mobility in a growing company. Location: San Antonio or Houston TX. Interested candidates should send their resume @ jobs@kentechpower.com or by fax to 210-946-2473.

Field Service Technician

Perform preventative maintenance, start-ups and repairs on generators; including automatic transfer switches, diesel, and gaseous engines. Promote safe and efficient operation of duties. Up to 35% travel required.

- Diagnoses and repairs generator set systems and ancillary components in a field environment
 - Performs complex power generation system commissioning and startups.
 - Field engineers and/or field modifies equipment
- Applicants apply at www.mtuonlineenergy.com/mtuonline/

Generator Service Technicians Prime Power Services, Inc.

Growing company is seeking qualified candidates in the Raleigh, Charlotte, Columbia area- with 3-5 years of experience in the power generation field, skilled in both mechanical and electrical applications having knowledge in troubleshooting, maintenance/repair for gensets ranging from 5-2000 KW w/associated fuel systems, switchgear, transfers and controls. Must pass a criminal background/drug screen, experience w/UPS systems, and other EPSS systems. Please forward your resume with cover letter and salary requirements to ccernut@primepower.com EGSA Certified Technicians Preferred.

Generator Tech, Class A

Seeking a "Class A" generator technician in the Birmingham, AL area. 15 years of experience in diesel power generation industry required. Responsible for start up, commissioning, troubleshooting and maintenance on a variety of diesel and gas power generation sets and their control systems, including ATS and switchgear. Must be able to diagnose and repair power generators in-house and in the field, using technical expertise and diagnostic equipment. Must be willing to work in a team environment. Some overnight travel with occasional extended travel required. To apply email resume to awallace@maegen.com. EGSA Certified Technicians Preferred.

Sales Representatives

TAW® Power Systems, the Kohler Generator Distributor for the Gulf Coast, is adding to our sales force in FL, AL, MS & LA for industrial & service sales. E-mail resumes to ellen.donagan@tawinc.com or fax 813-217-8076. DFWP AA/EOE. www.tawinc.com.

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APR Energy, Cat and Ring Power Sign Five-Year Cooperation Deal

Caterpillar dealer Ring Power and APR Energy have signed a five-year agreement to cooperate on international power rental projects, particularly in emerging markets.

APR will work with Caterpillar, Florida-based Ring Power and the Cat dealer network worldwide to win power plant jobs. Under the agreement, Cat will supply mobile generator sets through Ring Power to APR Energy, which is also based in Florida. Ring Power and APR have been working together for many years.

Under the agreement, APR will use Caterpillar as its engine source at “beneficial” prices and will also have access to power rental contract opportunities sourced by Cat’s worldwide dealer network.

Caterpillar or its dealers will not get any commission on power projects won. However, a spokesman for APR Energy said it would use Cat dealers for service and support on contracts identified by Caterpillar. These contracts can be worth several hundred thousands of dollars a month for large projects.

Many of Caterpillar’s dealers are already involved in power rentals, but often at the local level and not in major international projects. The deal will give Cat access to that market, where APR will compete head to head with Aggreko.

“I have been doing business with Caterpillar for more than 20 years, and APR has used their power modules for its entire history”, said John Campion, Chief Executive Officer of APR, “We know Caterpillar well and have great respect for them. This is an exciting win-win for all of us. With this agreement, we can work together to fulfill a far greater number of global power opportunities.”

Bill Rohner, Caterpillar Vice President with responsibility for electric power, said; “We are pleased to be working with Ring Power and APR Energy as we expand our growth in the international power projects business. APR’s experience in temporary power solutions, Caterpillar’s engineering and product expertise and Ring Power’s rental experience will enable us to better serve our customers”.

As part of the agreement, Cat dealer Ring

Power will provide application, engineering, sales and product support to APR Energy.

“Our market leading product support and rental service capabilities enable us to deliver world-class energy solutions to our customers, and we look forward to continuing our long-standing relationship with APR Energy,” said Randy Ringhaver, President of Ring Power.

Key Cat products for APR will include the XQ2000 and XQ1475G power modules, designed specifically for the international power projects market. The new version of the XQ2000 power module uses the 3516B engine, and can run at both 50 and 60 Hz.

It is still unclear how the Cat-APR deal will impact on Energyst, the European-based power rental company co-owned by more than eight Caterpillar dealers. Although focused on Europe, Energyst has in recent years started to target the international power projects sector and had won contracts in Chile and Argentina.

The spokesman for APR said its agreement with Cat would be focused on emerging markets and not on small scale ‘local’ rental contracts.

For more information, visit www.cat.com/power-generation/news. ■

Woodward Authorized Distributor Opens Service and Repair Facility in Norfolk, Virginia

Governor Control Systems, Inc. (GCS) announces the opening of its third Woodward service and repair facility. Located in Norfolk, Virginia, GCS Mid-Atlantic joins GCS network of Woodward service and repair facilities with locations in the Southeast and Gulf Coast. The GCS Mid-Atlantic service and repair facility offers local Woodward governor repairs and maintenance and is supported by GCS extensive Woodward inventory. GCS is the Woodward Authorized Distributor for Virginia and the surrounding regions, bringing state-of-the-art Woodward test equipment and factory trained governor specialists to Norfolk.

Benjamin Lozano, GCS Vice President, states, “We are very excited about adding this new service base and look forward to working closely with many of our old friends in the Norfolk area”.

Opening on November 1, 2011, GCS

chose the location of Norfolk, VA, to offer customers within the Mid-Atlantic region a conveniently located governor service and repair facility, keeping equipment operating at peak performance, while minimizing downtime.

GCS network of Woodward authorized service facilities is committed to 24/7 customer service and specializes in repair and service for military, marine, utility/power generation, pulp and paper, chemical processing and industrial markets. ■

Doosan Infracore Remarketing Services and Latin America Operations Relocate to New Facility

Doosan Infracore Remarketing Services and Latin America Operations has relocated to a new facility in the Miami, FL., area.

The new physical address for Doosan Remarketing is 12690 Northwest South River Drive, Medley, Florida 33178. The new main phone number is (305) 715-0009 and the main fax number is (305) 715-0080.

In its new location, Doosan Remarketing brings in used equipment from across the United States for remarketing to emerging markets primarily throughout Latin America. Used equipment ranges from air compressors and generators to skid steer loaders and excavators.

Latin America Operations provides product and customer support for Doosan Portable Power throughout Latin America.

For more information, please visit www.useddoosan.com. ■

United Alloy Announces Warehouse Expansion

United Alloy, Inc. announces an addition to its 4100 Kennedy Road, Janesville, WI facility with a 21,000 square foot warehouse expansion to support its successful contract fabrication commercial strategy.

UAI, a custom metal fabricator serving the North American power generation UL142 and UN31A certified diesel fuel markets, is an ISO 9001:2008, WBENC company.

For more information, visit www.unitedalloy.com. ■



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KEN LOETSCHER

Assistant Director Facilities Management
St. Joseph's Hospital



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Generac Power Systems Acquires Magnum Products

Generac Power Systems announced Monday that it has acquired Magnum Products, a leading manufacturer of high-quality light towers and mobile generators. The acquisition combines Magnum's 23 years of experience with Generac's 52 years of power expertise to create a stronger, larger company with broadened product offerings and expanded distribution channels.

Magnum will function as a standalone business, continuing operations out of its facilities in Berlin, WI. Generac will maintain the Magnum brand and the companies, will together, employ more than 1,800 people throughout Wisconsin.

Generac, a subsidiary of Generac Holdings, Inc. (NYSE: GNRC), is a leading producer of commercial and industrial portable and standby generators. Magnum is the number one light tower manufacturer in North America, with a growing market share in the power rental and mobile generator market; it was privately held.

"Magnum is an outstanding strategic fit for Generac's business," said Aaron Jagdfeld, President and CEO of Generac. "This acquisition brings together two of Wisconsin's leading manufacturers to better serve customers. We are very excited about what we will achieve through our combined efforts in engineering, sales, and service."

Magnum was owned by its retiring Founder and Chairman, Tom Joseph. "Both companies have earned outstanding reputations in their respective marketplaces and the combined company will be very powerful. Magnum and Generac have a bright future and Magnum's outstanding leadership team will execute a seamless transition under Generac's ownership."

Magnum's management team will continue to lead the company. Generac and Magnum will share best practices including global sourcing and vertical manufacturing.

For more information, visit www.Generac.com. ■

Waldron Named to Altronic Service Staff

Ohio-based Altronic, LLC has added Jerrod Waldron to its service personnel as a Technical Services Engineer. Mr. Waldron will be responsible for technical service support for the complete line of Altronic ignition and digital instrumentation products and will operate from company headquarters in Girard, Ohio.


Jerrod holds a BS in Applied Science from Youngstown State University, Youngstown, OH, where he majored in Electrical Engineering Technology. Prior to joining Altronic, he was employed as an Electrician and Foreman on commercial and industrial construction projects at Valley Electrical Consolidated, Inc., Girard, Ohio. Mr. Waldron was also previously employed by Roth Brothers, Inc., Youngstown, OH, as a Project Manager. His duties included the coordination of Energy Management System (EMS) installations with subcontractors and commissioning of completed systems.

For more information, visit www.altronicinc.com. ■



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Bringing Power Together: A New Business Relationship Between Taylor Power Systems and Kossen Equipment

Taylor Power Systems, a leading manufacturer of standby and prime power generators, recently signed an agreement with Kossen Equipment, Inc. Kossen will represent Taylor products in Mississippi, Alabama, Louisiana, the Florida Panhandle and East Texas. Kossen is a leading emergency power supplier in the US and is one of the Southeast's largest distributors of emergency generators.

Taylor Power Systems, located in Richland, Mississippi, is part of the Taylor Group of Companies, based in Louisville, Mississippi. Established in 1986, Taylor Power Systems manufactures and distributes a comprehensive line of industrial generators in both stationery and mobile configurations, many built to the specific needs of their customer.

"This is a tremendous growth opportunity in terms of sales and employment for Taylor Power," noted Robert Taylor, President of Taylor Power Systems. "We believe that growth from this venture will lead to more opportunities and the continued expansion of Taylor Power." Added Tom Kossen, President of Kossen Equipment, "The bottom line is that this makes for a strong partnership that will allow us both to grow."

Growth is already occurring, as both Taylor and Kossen are in the process of building larger plant facilities. Kossen Equipment is currently building a new plant in Richland, MS, scheduled for completion in late 2011. Taylor Power Systems is increasing their square footage of their Richland, MS, plant, with completion scheduled for the near future.

"Last year, Taylor Power Systems moved into a new facility utilizing 5 acres and already we're bursting at the seams," explained John Scarborough, General Manager of Sales for Taylor.

"We believe that by aligning ourselves with Taylor Power Systems, a Mississippi (Southern) manufacturer, we will be able to provide more input into the products and services that we deliver to our customers," said Tom Kossen.

"Customers in this area need equipment housing that can handle 175+ mile-an hour hurricane winds, as well as equipment that's designed to withstand the region's triple-digit heat, high humidity, and, even wildlife," added Tom Kossen. "And we believe Taylor Power Systems is the absolute expert at developing equipment specifically for the southern United States." Taylor Power Systems is a part of The Taylor Group of Companies, which also includes Taylor Machine Works, a well known premier manufacturer of lift equipment used around the world.

For more information, visit www.taylorpower.com. ■

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